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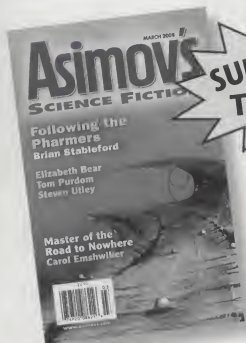
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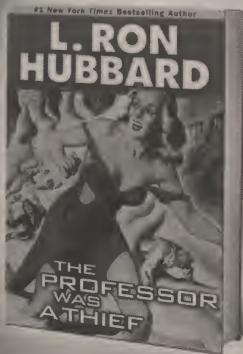
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NOVELETTES

- 14 THE QUALIA ENGINE DAMIEN BRODERICK
84 CALIFORNIA BURNING MICHAEL BLUMLEIN

SHORT STORIES

- 34 CREATURES OF WELL-DEFINED HABITS ROBERT REED
43 BLUE DEREK ZUMSTEG
56 THE CONSCIOUSNESS PROBLEM MARY ROBINETTE KOWAL
68 TWO BOYS STEVEN POPKES
81 TURBULENCE KRISTINE KATHRYN RUSCH

POETRY

- 9 CHICKEN FROM MINSK KARIN L. FRANK
13 OSTEOMETRY ERIN HOFFMAN
33 DOING SPLITS RUTH BERMAN
55 AND MY SINUSES ARE KILLING ME TINA CONNOLLY
67 HUMAN RESOURCES F.J. BERGMANN

DEPARTMENTS

- 4 EDITORIAL: 2009 READERS' AWARDS SHEILA WILLIAMS
6 REFLECTIONS: ADVENTURES IN THE
FAR FUTURE II ROBERT SILVERBERG
10 ON THE NET: AND THE WINNER IS JAMES PATRICK KELLY
106 NEXT ISSUE
107 ON BOOKS PETER HECK
112 THE SF CONVENTIONAL CALENDAR ERWIN S. STRAUSS

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2009 READERS' AWARDS

Years ago Isaac Asimov told me that having a story accepted for publication was like winning a major competition. After all, the story had to face long odds in its quest to capture one of the limited spaces in a magazine or anthology. The seventy-three short pieces of fiction that made it into *Asimov's* last year beat out thousands of others for their coveted spots. The same odds held true for the thirty poems that found a place in the magazine. We're proud to have published all of these stories and poems, but it is also a delight to announce which ones were selected by you to receive our annual Readers' Awards.

As always, my favorite part of the contest was reading over your comments. Your diverse opinions were thought provoking, uplifting, and entertaining. First-time voter, Jason McWright, wrote, "I have enjoyed almost every story in *Asimov's* and have been particularly surprised with the high quality of the poetry. It was pleasantly painful attempting to pick three poems out of the many excellent offerings." Returning voter, Alan K. Lipton, wrote: "Thank you all for another great year! Not everything you publish is to my taste, but I respect your editorial judgement. The good stories are always standouts. Being asked to vote for just a few gives me a sense of the choices you have to make on a daily basis. Keep up the good work."

Opinions as to which stories were the best were wide ranging. As usual, one person's hands-down favorite tale was another reader's weakest link in the chain. Soon Lee and other readers gave our new format "a cautious note of approval," and a great deal of praise was heaped on our cover art. For only the second time in the award's history, we had a tie for best cover. Both artists were mak-

ing their very first appearance in *Asimov's*. Tomasz Maronski received the nod for a piece of art that we reprinted on our March issue, while John Picacio received his for the original artwork that accompanied our September issue.

Although Robert Reed's "Truth" had a strong run for best novella, Kristine Kathryn Rusch eventually won the category handily with her story, "The Room of Lost Souls." Kij Johnson, whose short story "26 Monkeys, Also the Abyss" is nominated for the Nebula and the Hugo awards as well, breezed to the top of her category. While James Alan Gardner's "The Ray-Gun: A Love Story" is also a finalist for both honors, he ran neck-in-neck for the best novelette award. "The Ray-Gun" nosed out Ted Kosmatka's "Divining Light" by the tiniest margin possible, but we were delighted to see how many readers thoroughly enjoyed both stories.

While Joanne Merriam's amusing, if wry, depiction of "Deaths on Other Planets" was the clear winner in poetry this year, the jockeying for position occurred in the next several spots. Only four points separate Jack O'Brien's second-place "Classic of Science Fiction: 'The Cold Equations'" from Bruce Boston's fifth place "Gargoyle People."

In addition to how you ranked the stories, it was interesting to learn a few facts about you, too. While some monikers were ambiguous, it was apparent that close to 30 percent of our voters were women and around 70 percent were men. Voters represented every region of the United States and six out of seven continents (no votes came in from penguins or McMurdo Station). Some of you are brand-new subscribers while others have been reading the magazine for years. We value all of your opinions and hope to hear from even more readers next year. ○

2009 READERS' AWARD WINNERS

BEST NOVELLA

1. **THE ROOM OF LOST SOULS;**
KRISTINE KATHRYN RUSCH
2. Truth; Robert Reed
3. The Hob Carpet; Ian R. Macleod
4. The Erdmann Nexus; Nancy Kress
5. The Philosopher's Stone; Brian Stableford

BEST NOVELETTE

1. **THE RAY-GUN: A LOVE STORY;**
JAMES ALAN GARDNER
2. Divining Light; Ted Kosmatka
3. In Concert; Melanie Tem & Steve Rasnic Tem
4. An Alien Heresy; S.P. Somtow
4. Memory Dog; Kathleen Ann Goonan

BEST SHORT STORY

1. **26 MONKEYS, ALSO THE ABYSS;**
KIJ JOHNSON
2. From Babel's Fall'n Glory We Fled; Michael Swanwick
3. Horse Racing; Mary Rosenblum
4. Beneath Sunlit Shallows; Derek Künsken
5. Listening for Submarines; Peter Higgins

BEST POEM

1. **DEATHS ON OTHER PLANETS;**
JOANNE MERRIAM
2. Classics of Science Fiction: "The Cold Equations"; Jack O'Brien
3. Cat Math; Ruth Berman
4. Landscapes; Geoffrey A. Landis
5. Gargoyle People; Bruce Boston

BEST COVER

1. **MARCH;**
TOMASZ MARONSKI (tie)
1. **SEPTEMBER;**
JOHN PICACIO (tie)
3. December; J.K. Potter
4. April/May; Donato Giancola
5. August; Bob Eggleton

ADVENTURES IN THE FAR FUTURE II

Last issue I described my quest in recent months for some of the multitudinous foreign editions of my books and stories. I explained that my works have been translated into some thirty languages, many of them in several editions apiece, but the overseas publishers have only occasionally sent their books to me, and so my files are lacking many hundreds of them. Lately, taking advantage of the search capacity of the Internet, I've embarked on a vast project to acquire them from booksellers far and wide. I noted that acquiring the books in some countries has been relatively easy, but getting them from others—Lithuania, for example—has turned out to be quite a linguistic challenge.

I had pretty much given up hope of finding some of these books. My long list of missing titles goes back more than thirty years. But just yesterday I crossed the oldest item off the list—*Le Maschere del Tempo*, the first Italian edition of my 1968 novel *The Masks of Time*. My records show that I was paid \$284 for the translation rights in December 1977, and I knew it had actually been published because an indefatigable Italian scholar of science fiction named Ernesto Vegetti has compiled a vast bibliography of SF and fantasy published in Italy that I found on the Internet. Item 76 out of the 307 Silverberg entries on that bibliography is *Le Maschere del Tempo*, published by the house of Fanucci.

A copy of it is on my desk now: a big lovely paperback with a fifteen-page preface about my career, which I can more or less read, because I studied Italian in college midway through the last century. I acquired the book through very this-century methods: first using the Vegetti bibliography, then Googling for my book and learning that it was

available on eBay, and finally paying for it, not by a laborious process of transferring money from my bank to the seller's, but with a few clicks on my Paypal account. The whole thing took about half an hour. None of that could have been done as recently as fifteen years ago, which is why I had to wait so long for my copy. (I also got into a charming correspondence—in Italian—with the eBay seller, who was delighted to find that it was the author of the book who was the purchaser.)

If I had been trying to find my surprisingly numerous Bulgarian editions that way, I would have had a much harder time, because Bulgaria uses the Cyrillic alphabet, which I can't read. But here I had the help of two of my loyal Bulgarian readers, Trayana Grigorova and Mihail Hadzhitorov. Trayana belongs to a chat site that discusses my work. I visit it frequently, and mentioned one time that I was looking for many of my books in foreign languages. Quickly Trayana posted a complete Silverberg Bulgarian bibliography on the site, with splendid color photos of each book, and then she and her boyfriend Mihail located and sent me the whole group—not just the novels, but obscure paperback anthologies long out of print. They did heroic work, and I am deeply grateful.

Monica Fuchs, who was born in Romania but moved to Israel when she was thirteen, belongs to the same chat group. Monica was able to perform double service, because her parents still live in Romania and through them she got me several of my Romanian books. (Thus leading to a nice check from one of the publishers, who had—innocently, it appears—forgotten to pay me for the book.) Then she tracked down copies of all my Israeli editions, which are quite numer-

ous. Just one item eluded her: the five issues of an Israeli SF magazine called *Fantasia 2000*, which are rare collectors' items in Israel. But she did start an Internet search for them, and within weeks she had heard from Mika Namir, an Israeli who now lives in Pennsylvania, and who had a near-complete file of the magazine that she wanted to give away. Mika sent me all but one of the issues I wanted in exchange for an autographed copy of one of my books, and now my file of Israeli editions is essentially complete.

Martin Sust, the editor of a Czech science fiction magazine, wrote to me asking to buy translation rights to one of my stories. I told him about my project of collecting my translated work, and he e-mailed me a link to a bibliographical list of my entire Czech oeuvre. Even better, he put me in touch with the excellent Czech on-line bookstore, www.daemon.cz, whose owner was happy to send me a big box of my Czech books. The Czech SF publishing scene is a lively one and American writers who go to [daemon.cz](http://www.daemon.cz) and type their names into the search box will get some interesting results. (Though navigating the all-Czech site is a bit of a challenge!)

Making one's way in Dutch isn't so easy, either. As I learned in 1990 when I attended the World SF Convention at the Hague, the Dutch language is Teutonic in its origins, but everything has taken on a kind of dreamlike sparkle, and even knowing a little German, as I do, is not terribly helpful when trying to read Dutch. I went searching for a 1983 Dutch edition of *Lord Valentine's Castle* that I couldn't find even when I was in the Netherlands, and quickly turned it up on a Dutch bookselling site with the charming name of www.boekwinkeltjes.nl. But trying to decipher the description of the book's condition got me, well, in Dutch. "Redelijk tot goede staat," I guessed, meant something like "Reasonably good state," but what about "leesvoren in rug, vouw in achterplat, randjes wat sleet, snede vergeeld"? Did I

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really want a copy that was snede vergeeled and leesvowen in rug? I had no idea. Instead of taking the risk, I searched again, and found a copy whose seller described its condition simply as “mooi.” Mooi? Suddenly I remembered that the Internet offers translation sites. A couple of clicks and I learned that “mooi” means “beautiful.” Good enough for me. I ordered the book and asked the seller how he wanted me to pay him—Visa, Paypal, what? Back from Holland came a quick reply from the seller, Conraad Meijer. Like nearly all of his countrymen, he’s perfectly fluent in English. He told me that he wasn’t a book dealer, just a reader disposing of his collection, and, delighted to be of service to the author of *Lord Valentine’s Castle*, he would send me the book without charge. Which he did, and it was indeed a mooi copy, for which I publicly thank the generous Conraad Meijer.

Jaroslav Olsa, a Czech SF fan who is also one of that country’s diplomats, spent some time in Iran years ago and found me a Persian edition of my early novel *Stepsons of Terra*. Are there others? I may never know, because Jaroslav is now his country’s ambassador to South Korea, and I don’t know how to find some helpful fan from Iran to assist in my research.

Greece is another country where I’ve been extensively published and where a language barrier gets in the way of my finding the books. The charming Nikos Theodorou of the northern Greek city of Ioannina came to the rescue here with big packages of books, and some that even he couldn’t find were obtained for me by Professor Donna Pastourmatzi of the School of English of Aristotle University (what better name for a university could there be?) in Thessaloniki.

And Jon Davis, who runs my web site for me <www.majipoor.com> got sent to China to do some computer work, where he discovered Chinese editions of *Thorns* and *Lord Valentine’s Castle*. The Hungarian editor and translator Attila

Nemeth is tracking down a host of Hungarian editions for me. When I was in Barcelona years ago, book and magazine editor Alejo Cuervo found me a host of my Spanish editions, and I am trolling the Spanish web sites now for others. Some years back my friend Alvaro Zinos-Amaro, who was studying in Germany, sent me a big box of my German editions. And so it has gone, all around the world.

Where I have at least a smattering of the language, I’ve had a fairly easy time rounding up the books on my own. Germany has its own versions of **amazon.com** and **ABE.com**, using software pretty much like that of the parent companies, and it has taken only a little dictionary work for me to order dozens of books from them that Alvaro had been unable to find, making use of the excellent bibliography of my German translations that Dirk Berger of Leipzig compiled when I was guest of honor at a convention there in 1997. I’ve had dozens of stories in German anthologies with titles like *Die Gehause der Zeit* and *Welten der Wahrsscheinlichkeit* (the German word for “anthology editor” is “Herausgeber,” by the way) and some dextrous clicking has bought me nearly all of them. France, too, has an **amazon.com** and an **ABE.com**, and its own bookselling site, **galaxidion.com**, and those have yielded a lot of my French editions—though in one case I had to go to the Canadian **amazon.com** for a French title, because it was no longer available in France itself. My friend and French translator Pierre-Paul Durastanti has been very helpful in finding the books that even these web sites can’t provide. And this week the proprietors of the fine French bookstore **cybersfere.com** sent me four beautifully organized bibliographies of all my French publications, which will allow me to discover which ones I’m still missing.

Each day brings some new help in my search. Just yesterday I heard from Ernesto Vegetti, the Italian bibliographer who has joined the hunt. Perhaps next

week will bring me contact with readers in Portugal and Turkey and Argentina, where I've made no connections so far. I'd like to find some of my Japanese editions, too. (I had no luck when I was there for the Worldcon in 2007.) And though I was able to gather a goodly number of my almost innumerable Russian translations a few years ago with the help of the agent Alexander Korzhenevski, I know I'm missing dozens more.

I'm sure I've left out the names of many other SF readers and booksellers around the world who have aided me in this quest, and, if you are one of them,

my apologies go to you—I just couldn't mention everybody. It's been quite an adventure, one that I could not have embarked on without the help of the Internet. I've been aware all along that science fiction is an international phenomenon—as far back as 1957, when I was in Paris, I paid a call at the offices of the French magazine *Galaxie* to beg a copy, in my broken French, of an issue that contained an early story of mine—but now, as I look down the long rows of foreign editions sent to me by new friends in so many lands, I have an even deeper understanding of what a far-flung enterprise it is. O

CHICKEN FROM MINSK

Hey rooster,
Tyrannosaurus Rex descendent,
You've come a long way down
From that creature resplendent.
The thunder of your footfalls
Once ruled the earth.
Now here you are fallen
To an object of mirth.
You squawk for a handout
And scratch in the dregs.
You cannot stop humans
From devouring hen's eggs.
Your ancestor would have rent
Them limb from limb
If they had lived
In the same millennium.
Preen your plumage, rooster,
And dream if you can
Of your days of glory,
Days of dominion
While stripped to the bone
In museums, stands Sue
Whose terrible beauty
Has devolved into you.

—Karin L. Frank



AND THE WINNER IS

honored

I've been thinking a lot about awards of late. I type this in the wake of the **2009 Academy Awards** <oscar.com>. I don't know if it says something about me or the times, but I saw very few of the nominees this year. Nonetheless I sat through the first couple of hours of the show. Meanwhile, I've just finished serving on the jury that chose four new entrants into the Science Fiction Hall of Fame at the **Science Fiction Museum** <empsfm.org>. And a story of mine that appeared on these pages has somehow stumbled onto the final ballot for the Nebula Awards. And Hugo nominations are due. And there is the *Locus* Poll to fill out. And on and on and on. Maybe awards season has something to do with the fact that we've been snowbound for the past twelve weeks and have nothing better to do with our idle hours. Wait a minute, that might explain what's going on here in frigid New Hampshire, but how does it explain why people in Miami and Phoenix and San Diego care?

So why do we give all these awards, anyway? For good or ill, it seems to me that they are an important part of our cultural conversation. Whenever any group of friends get together, at some point they will probably start to swap ideas about the latest music. Or else argue about the hottest new game for the Wii. Which was your favorite story in the June issue of *'Mov's*? What did you think of *Watchmen* <watchmenmovie.warnerbros.com>? Awards are how large affinity groups have these same conversations. And awards dissent is at least as useful to the group as is the affirmation of naming the winner. Was **J. K. Rowling's** <jkrowling.com> *Harry Potter* and

the Goblet of Fire more Hugo-worthy than **George R.R. Martin's** <georgerrmartin.com> *A Storm of Swords*? *Glimpses* by **Lewis Shiner** <lewisshiner.com> for the 1994 World Fantasy Award for best novel or *The Iron Dragon's Daughter* by **Michael Swanwick** <michaelswanwick.com>? **Jonathan Lethem** <jonathanlethem.com> stirred up a hornet's nest when he published a **fascinating alternate history of SF** <verysilly.org/lethem/lethems_vision.html> that imagined that *Gravity's Rainbow* by **Thomas Pynchon** <thomaspyynchon.com> had beaten out **Arthur C. Clarke's** <arthurclarke.net> *Rendezvous With Rama* for the 1974 Nebula. And yes, Pynchon was on the final ballot!

top ten

The last time I wrote about **awards in this space** <asimovs.com/_issue_0505/onthenet.shtml>, I got into trouble by suggesting—with tongue firmly in cheek—that the Hugos might be dragged kicking and screaming into the twenty-first century by adding five new digital award categories. This was regarded as heresy in some quarters, although I think the ideas behind that column gather momentum with each passing year. This time around, however, I'm trying not to step on sensitive toes. Instead I simply offer a guided tour of what I consider the top ten genre awards—in inoffensive alphabetical order, if you please.

The **Asimov's** <asimovs.com> and **Analog** <analogsf.com> Awards—the proper names of these sister awards, voted each year by you readers, are the *Asimov's* Readers' Award and the *Analog* Analytical Laboratory. They were first given in 1987. Each magazine gives indi-

vidual awards for best novella, novelette, short story, and cover. There is also an An-Lab award for best fact article, while here at *Mov's* we give a nod to best poem.

The Hugo Awards <thehugoawards.org> are the oldest of the genre awards and probably the most prestigious, though some of the Science Fiction Writers of America might disagree. They are nominated for and voted on by members of the World Science Fiction Convention. 2009's is called **Anticipation** <anticipation.sfca.org>, and it will take place in Montreal from August 6-10. Typically about a thousand members vote. There are fourteen Hugo categories; the various awards go to writers, editors, artists, and fans. There also are two best dramatic presentation awards, Long (think movies) and Short (think TV). From time to time the Hugo committee will give out special Hugos; it was the one-shot special Hugo category of Best Web Site that got me in hot water in that previous column.

The James Tiptree, Jr. Award was birthed in 1991 by founding mothers **Pat Murphy** <brazenhussies.net/murphy> and **Karen Joy Fowler** <karenjoyfowler.com>. It is a juried award given to a work of science fiction or fantasy that expands or explores our understanding of gender. Because the jury changes every year, and the notion of exploring gender has been kept deliberately vague, the winners have been an eclectic bunch. The award is entirely supported by fundraising, included two cookbooks, feminist bake sales, and auctions. **James Tiptree, Jr.** <davidlavery.net/Tiptree>, of course, was the penname of the late Alice Sheldon.

The John W. Campbell Memorial Award <www2.ku.edu/~sfcenter/campbell.htm> traveled around the world in the years after it was founded in 1973, but since 1979 it has settled at the annual **Campbell Conference** <www2.ku.edu/~sfcenter/campbell-conference.htm> held at the University of Kansas. The Campbell jury, charged with picking the best science fiction novel of the year, changes slowly, with some members serving for years at a time. If you thought that the

Campbell award went to the best new writer of the year, don't worry. You're right. But that's the other **John W. Campbell Award** <writertopia.com/awards/Campbell>, also named after the late, great editor and writer <en.wikipedia.org/wiki/John_W._Campbell>. It's sponsored by Dell Magazines and given every year at the Hugo ceremony, although it is not, as the WorldCon administrators will rush to remind you, a Hugo.

The Locus Poll <locusmag.com/SFAwards/Db/Locus.html> is decided in a single round of voting based in part on recommendations made by the staff of that venerable voice of science fiction, **Locus Magazine** <locusmag.com>. Once, the right to vote was limited to readers of the magazine, but in recent years it has been open to anyone who stops by the website. The folks at *Locus* crow that the pool of voters for their award is larger than that of any other award. There are fourteen categories in the *Locus* Poll, which was first taken in 1971.

The Nebula Awards <sfwa.org/awards> are nominated for and voted on each year by the members of the **Science Fiction Writers of America** <sfwa.org>. They are given in four categories, novel, novella, novelette, and short story. At various times in their contentious history there have been Nebulas given to dramatic presentations and then not, and then to scripts and now not. Also awarded at the Nebula banquet are the **Andre Norton Award for Young Adult Science Fiction and Fantasy** <sfwa.org/awards/nortonguide.htm> and the **Damon Knight Memorial Grand Master Award** <sfwa.org/Awards/grand.htm>, but these are not Nebulas. Over the years, SFWA has tinkered tirelessly with the Nebula rules, trying to make them more fair—with mixed results. Earlier this year a new set of reforms was put in place, the most significant of which was to revert the awards to a calendar year basis. Under the previous arcane rules of rolling eligibility, works that had been previously published up to two years prior to the ceremony were winning awards.

The Philip K. Dick Award <philipk>

dickaward.org> is presented annually at **Norwescon** <norwescon.org> to the best original paperback published each year in the United States. This is a jury award, with the members of the jury changing every year. It was first given in 1982, the year of Dick's death, and is co-sponsored by the Philadelphia Science Fiction Society, the **Philip K. Dick Trust** <philipkdick.com>, and the North West Science Fiction Society.

The Science Fiction Hall of Fame <empsfm.org/exhibitions/index.asp?categoryID=203> was founded in 1996 by the Kansas City Science Fiction and Fantasy Society at that bastion of SF awards, the University of Kansas. Each year since, four individuals have been selected by a rotating jury to honor their contribution to the science fiction field. There are four broad categories from which the honorees are selected: Literary, Art, Media and Open. The Hall is now housed in a beautiful display at the Science Fiction Museum in Seattle.

The Theodore Sturgeon Memorial Award for the best short science fiction of the year was founded in 1987 by **James Gunn** <www2.ku.edu/~sfcenter/bio.htm> and the heirs of the celebrated writer **Ted Sturgeon** <physics.emory.edu/~weeks/sturgeon>. In its early years the Sturgeon was selected by a committee headed by **Orson Scott Card** <hatrack.com>, but since 1995 it has been a juried award. The jurors on this one change rarely. The Sturgeon is presented each year at the Campbell Conference. Up until 2003, only one story was honored. Since then, first, second, and third place stories have been acknowledged.

The World Fantasy Awards <worldfantasy.org/awards>, first given in 1975, are presented at the annual World Fantasy Convention. Members of the convention get to nominate two works in each category, and a panel of judges, which changes from year to year, can then add three or more nominees. Because the eventual winners are determined solely by the judges, the World Fantasy is less of a popularity contest than the Hugos or Nebulas, and the

award has sometimes gone to deserving but relatively obscure works. The World Fantasy Awards honor the best novel, novella, short story under ten thousand words, anthology, single-author collection, and artist. In addition, there are special awards for professionals and non-professionals.

exit

If you're not exhausted at this point, know that I've barely begun to list all the hardware that the various fantastic genres deploy to pat their practitioners on their backs. For example, I've probably offended some of my friends in the horror end of the biz by failing to mention the **Stokers** <horror.org/stokers.htm>. And what about recognizing all that wonderful art which graces our humble screeds? Jim sez check out the **Chesleys** <asfa-art.org/chesley.html>. Although some of the awards I've mentioned are international in scope, many countries have indigenous awards, like the **British Science Fiction Association Awards** <bsfa.co.uk/awards.aspx>, the **Australian Aurealis Awards** <aurealisawards.com>, and the **Japanese Seiun Awards** <en.wikipedia.org/wiki/Seiun_Award>, to name but three.

And on and on and on. But I have to stop soon, because Sheila doesn't give awards to longwinded columnists. So let me leave you with two indispensable guides, if you want to continue to explore AwardLand. **The Locus Index to Science Fiction Awards** <locusmag.com/SFAwards/index.html>, compiled by the indefatigable Mark R. Kelly, is a historical archive of all the winners and nominees of every important award ever handed out. But if you need to know what is happening *right now* with your favorite award, click immediately to **Science Fiction Awards Watch** <sfawardswatch.com> for unbiased reporting and astute commentary by Cheryl Morgan and Kevin Standlee.

And if you should ever have the pleasure, as I have had, to be a contender for an award, never forget this truth: *It's an honor just to be nominated.* ○

OSTEOMETRY

I measure things by their bones.
Cats do this also. They

look at you as if to say—"yes,
you need those bones, you, prey;

not I, with my grace and sinew. I
can turn in midair, can creep, can

leap; your bones are heavy, caprine."
But a cat understands not its scale.

Deinonychus was, perhaps, a perfect
predator, and seventy million years

later we remember him, and Spinosaurus,
and Pteranodon. I wonder for us, prey;

in a hundred million years all
that we have achieved, will it re-

main, is there enough of us to last,
pressed into oil, mahogany bones

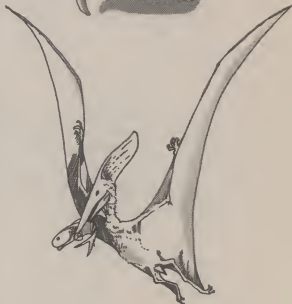
exhaling eternal majesty? Instead I
see concrete dissolving like sugar

beneath a glassy stream of hot assam;
all that we have given is temporary,

the clench of a sparrow's feet
in flight, gripping nothingness tight

between small hollow claws.

—Erin Hoffman



THE QUALIA ENGINE

Damien Broderick

Damien Broderick, who has been called “the Dean of Australian science fiction,” these days lives mostly in Texas. His recent popular science book on paranormal minds was *Outside the Gates of Science*. Damien tells us that a recurrent SF theme that has gripped him since childhood is the saga of superintelligent children struggling to come to terms with an unsympathetic world and their own gifts. That theme drove poignantly through many memorable stories, from A.E. van Vogt’s *Slan*, Wilmar Shiras’s *Children of the Atom*, and Mark Clifton’s “Star, Bright” to Heinlein’s “Gulf” and *Friday*. “The Qualia Engine” is the author’s tribute to those classic tales, carrying forward the legend of a first generation of uncomfortably bright *Homo novissimus* to ask what happens to *their* offspring, the grandchildren of the atom.

1

My sixteenth birthday was early spring, in effect, instead of late winter, that winter-spring when the bees continued to die and die.

For a long time nobody knew why that was happening. I suppose specialists in the honey business were on it sooner than most, watching their apiaries emptying and shutting down, the poor bees stumbling about on the ground, forgetting how to get up in the air, dragging themselves round in confusion and then drying up dead. Soon enough the agribiz guys also grasped that their free pollinators were dropping like, well, flies.

I know what it feels like to be one of those poor flightless bees.

The stranded bees were one of the mysteries of science, of which I understood there were many, and even I couldn’t expect to ace all of them. You do have to try, though. I stood waiting for the bus at 8:15 in the morning, thinking about ants and other topics. This was the last day of my life that I’d be obliged by law to wait for this damned daily humiliation, but that didn’t mean I was off the hook.

In our neighborhood, nine-tenths of those parents competent or fortunate enough to have kids in high school senior year insisted on the bus, even for those old enough to drive. Gas conservation was the cause of the month. Hey, fair enough, although it

was obvious, if you thought about it, that peak oil was no more than a blip in the future energy curve, soon to be forgotten. Long before we ran out, hard-edged R&D would find a replacement, and simultaneously mend the greenhouse crisis. Some of my friends were working on it in their spare moments, of which they, like I, had plenty, time-sharing the appalling waste lands of the classroom.

Didn't make me relish the ride.

It was pretty full that morning, and I was stuck with half the empty seat next to Cliff Dolejsi, jock. "Dude," he was telling his phone, "I'm wasted. Yeah, man. I porked that bitch in her daddy's Mercedes. Totally, dude."

This went on for a while. Up and down the bus, most of the others were busily texting, but that was too arduous a task for my companion. I tried to find some comfortable way of sitting that didn't put me in his lap.

"I'm on the damn bus," he explained. "Yeah, on the bus. School sucks. On the school bus, dude. Where are you? Yeah, man, she was screaming for it. No, on the bus."

According to rumor, Dolejsi had scored with most of the cheerleaders, and for once I didn't doubt public opinion. His excruciatingly repetitious report to Dude held no tincture of braggadocio; he was just relating the facts.

What made me grind my teeth is that Dolejsi was not unusually stupid. In two months he'd be graduating, along with the rest of us seniors. He was about as smart as, say, Xander Harris in *Buffy the Vampire Slayer*, or Prince Myshkin. No, scratch that; the prince, a saint, was not to be rated so simple-mindedly. Cliff Dolejsi was.

He shifted on his muscular left buttock and I took my chance, squirming further onto the rest of my seat. In disbelief, Dolejsi slammed his right elbow into my chest.

Having read the U.S. Army Ranger Handbook, I know eight silent ways to kill a man, plus some noisy ones. I twisted full on to Cliff, took my very sharp hexagonal section yellow RoseArt 5PK pencil from my pocket protector and clenched it between my right index and little fingers. I seized his ears and pulled his face across to me, where I kissed him slobberingly on the mouth, with plenty of tongue. Dolejsi went into a rictus of gay panic and disgust, slammed his head backward into the side window, and howled like a stuck pig. Which by then he was. I pushed the pencil in under his upper right eyelid, bumping and fracturing the thin bone, in through the socket, and deep into what he'd been pleased to call his brain, where I churned it around for a while, tearing the frontal lobes from the thalamus as his body convulsed and hammered the back of the seat where Judy Frick and Phuong Nguyen had jerked their heads around, staring in revolted horror at the—

Of course I didn't do any of that. It's messy, and they wouldn't let you forget it. I oofed at the elbow strike, clenched my teeth, and remained mute. He went on yacking as if nothing had happened. Nothing had happened.

"No, dude, still on the bus."

For a long moment I did try to imagine just what the hell it could be like, being a jerk like Dolejsi. Or to be anyone else in the bus, for that matter. I couldn't do it.

Was brain-power, raw and cooked, the gap dividing us? Well, obviously, in part. But I decided everyone was in the same leaky boat, really. And maybe that was the problem. Not just the Hard Problem, as the philosophers rather quaintly called it, but the Big Problem.

After school, I walked a mile to audit a perceptual psychology lecture informally, and ended up sitting at a table in The Genteel Pizzeria, cattycorner from the university's Physics, Engineering, and Computer Sciences wing with my three best friends who'd gathered for the event (my birthday, not my routine bus ride from hell nor the Dearth and Death of *Apis mellifera* and her sisters).

I said, "I've decided what I'm going to do with the rest of my life."

We were speedtalking in Lhasa Tibetan that day (our pronunciation was probably terrible), dropping into clipped English as needed. The only possible downside was the slight chance that some panicky idiot might imagine we were Al-Qaeda terrorists, plotting in Arabic, and drop a dime on us to Homeland Security. Unlikely. Besides, nobody else in the place was listening; who eavesdrops on kids, especially nerds?

"Oh yeah?" Marius picked up a chicken thigh, dipped it in sauce, gnawed with gusto. "Let's see, the top ten list of what you'll do with the rest of your life. Power your way through to the mega-prize on *Survivor*. Discover the Higgs particle in your garage proton accelerator. Did I mention getting laid by supermodels 'til your ears bleed?" He carefully put the naked bone on a paper plate and grabbed another, fully fleshed, crispy-browned, herbed and spiced.

"Saul's the sensitive type, you maroon," Ruthie told him. "He's extending the Bible Code to the genome." Ruth was the youngest of us seniors, only fifteen, total advanced placement with a perfect 2400 SAT (oops). Geek-grrl compleat: flat lifeless hair dragged back and cinched at her thin neck, big glasses the better to see you with and peer at distant galaxies besides. Rudimentary wearables in her flak-jacket-styled denim. I'm not judging—me, with the style sense of a contestant on *Beauty and the Geek*.

"Then," Ruthie added complacently, "he'll solve the monetary crisis."

Jane said, "Saul despises faith-based initiatives of all kinds. He is developing a new fuel source that will close down the cartels and bring peace to the Mideast and then the world."

"Shut up, you guys," I said. "I decided this morning in the bus. I'm going to solve the Hard Problem."

"You're telling me none of those is hard?"

"With the supermodels," said Marius, "for about thirty seconds."

"Ma-arrrr!"

"Chalmers," I said. I foraged in my blue vinyl JanSport backpack with the 'leventy-seven zippered pockets, snug against my right sneaker on the floor beside me, my laptop tucked away safely from slopped condiments, and pulled out *The Conscious Mind*. "Block, Dennett, Hofstadter, Damasio, Edelman, Hawkins, Searle, McGinn, the Churchwoods—"

"Oh," said Janey, "*that* Hard Problem. *Qualia*."

"And what's one of those?" Marius was peering up at the menu.

"One of those is a *quale*, singular." Not at all to my surprise, Janey pronounced it correctly: kwah-lay, rather than quail. "Qualia, plural. Raw feelings."

"Oh, right. I've never heard it pronounced before." That happened to us all the time; even when you've read right through Webster's or the OED, stuff sometimes doesn't stick without a context. "Units of consciousness, sort of."

"So what's the problem," Ruthie asked, "and why is it hard?"

"Capital-H hard. Because qualia seem kind of *unnecessary* and *superfluous*. Why would evolution build them into us? It's like . . . Well, do I *have* a body, or *am* I a body? No, that's not it, either. Why do we see red and taste sweet and hear plangent, all those completely different sensations?"

Ruthie pounced. "We don't always. Synesthesia, that's a condition when the senses get mixed up."

"I'm not getting this across. What's it *like* to be a *bat*?"

"What's it like to bat a bee?" asked Marius instantly, blithely.

I felt frustrated. Why couldn't they feel what I felt about this? I said, "Like, why do we *feel* stuff instead of just computing it."

"We *do* just compute it," Ruth said, an edge to her high-pitched child voice. "What were you just saying about faith-based—?"

"The brain's *not* a computer," Janey said. "Neurons aren't logic gates. Has the failure of the AI program escaped your attention? Earth to Ruth."

Ruth stamped her foot. "Don't talk crap. Your logic sucks, Janey. Pay attention. Empirical premise: current computers *as of 2009*, just like those of 1949, are *not yet* brains. Your brilliant conclusion: brains are not computational." She sat back, looking smug. "Spot the logical lapse?"

"Oh, shut up. If you're going to appeal to some undefined computation on futuristic architectures that don't exist yet, how can you lose? And if you think you've won, what do you think you've won?"

"Delicious as this banter is, dear friends, I'm outta here." Marius hoisted his own laptop, slipped off the stool, bounced on his Reebok'd toes. He punched me in the shoulder. "B-Day, dude. But hey, yeah, I'm in."

"Cool," I said. 2 heads > 1 head, but then *greater than* does not always equal *better than*. Consider a pile of elephant manure. "You guys in too?"

"Someone's got to educate you idiots," Ruthie said, and Janey added, dryly, "No Problem too Hard, no Solution too Hygroscopic."

I said, intelligently, "Huh?"

"Dehydration 101, doofus. Google it. 'Bye." And they were gone, arm in arm, like a pair of plotting twelve-year-olds. I wondered how it felt to be a girl. And of course, noticing myself wondering that, I had to smile. Those kids were just bats.

The reason we knew each other so well is because our parents were some of the so-called "Atom Kids," which was a slick cover-up for what they really were, which is the first crop of plasmid-injected, crudely genetically engineered humans. (Much of this bizarre history I did not learn until later that night.) Just five years after Crick and Watson first announced the structure of DNA. All the 'rents were born within ten months of the Los Alamos nuclear lab accident on 30 December, 1958, when a poor guy code-named K. splattered himself with three kilograms of plutonium in solution. He was dead a day and half later, his ruined heart cooked by twelve thousand RADS of ionizing radiation. Two other workers had been in the next room, shielded (lucky for them!) by various sturdy tanks. The near-coincidence was later noted by a diligent security publicity officer and starred in case it was ever needed as a cover story.

None of our grandparents was anywhere near the DP West building complex, which was located thousands of feet from any living or routine working quarters. They were all stationed in the general vicinity, in the extremely secured Biowarfare Unit, where the women went through the discomforts of primitive experimental IVF. Did that matter to the media, forty years later, when a garbled and massaged version of the actual incident was released? You think? Lapped up the nuke version like tame puppydogs. Those poor all-American fetuses, born late in 1959 to parents whose gonads were accidentally exposed to the frightful rays of the atom. But wait—it's okay! They turned out fine! No sign of illness except for some hairline scurf, red watery eyes for a few weeks after birth, and some temporary spikes now and then in their blood work. And what's more, Lord be praised, their own kids, the not very attention-grabbing grandchildren of the atom, were in good shape, also, making solid grades in school. Next story.

We'd been trained from infancy to keep our lips zipped and our lights well hidden under a bushel of general competence. Ruth, the youngest, chafed under those restrictions and could not help showing off a little; hence her SAT scores. But nobody, except for us and our folks, knew that she was pumping scads of freeware code into the net, everything from patches for Microsloth bloat to Linux tweaks and CGI shortcuts for YouTube homies, as well as freelancing for the big operators.

Me, I did well enough in class to deflect unwelcome interest from teachers and ad-

ministrators, as my parents had done when they were kids, until the brief bubble of exposure that was swiftly burst by the brilliantly conceived “accelerated schooling” scheme that ran interference on them for several years and allowed them to sink back out of sight as quickly as humanly possible.

More exactly, as superhumanly possible, I suppose, but the key part of the equation was the greater world in which they were immersed, those several billion *Homo sapiens sapiens* with a mean IQ of one hundred and a sigma of fifteen or sixteen points. Only a modest proportion fell in the diminishing tail beyond three sigmas either side of the mean (the bell curve being what it is, a map of what happens when tens of thousands of alleles jostle together in the gene pool and out paddles a new little person). Those on the right tail of the graph were the 2 percent or so who could join Mensa because they’d aced the test and wanted to sit about all night talking to other lonely people about humungous test scores and doing fearsome crossword puzzles and fun stuff like that. The Terman Longitudinal Study of gifted children, say, of whom you didn’t hear much these days. Out farther along the tail were the real frighteners with IQs up in the 190s and 200s, of which the whole history of the world had seen only a sufficient tally to cram into a large SUV. And off beyond *those* human geniuses were radical outliers who simply didn’t exist in nature, and hadn’t prior to 1959, because the thorny paths up Mount Improbable were too steep. You can’t get there from here. Unless someone carried your genome up in a plane and parachuted you in at the peak. Hi, Mom! Hi, Poppa!

Hush, little baby. Keep your feet tucked under the table, heads down, don’t make waves, and other mixed metonymies and synecdoches.

I went to Billies gym above Jakes Bodyworks on Main after I’d spent an hour in the library stacks reading agalamic political theory (Ruth’s recommendation) and waiting for my gut to digest the evil but delicious load I’d subjected it to at The Gentee Pizzeria, and burned it off in hard sweaty sets of weight work and aerobics, showered for the sake of politeness, changed into a rather worn cotton uniform for my thrice-weekly drills in the adjoining dojo, fell down and got hit a lot less than I had when I was a kid, broke no bones in my own body or anyone else’s, took a more serious shower, then went home to the formal birthday party I knew the parental units would have cooked up, even though I’d told them not to. I really would have preferred to rustle up something for myself, as usual, out in my self-contained studio apartment, blasting away with what Mom called “that abominable pseudo-musical noise,” then take Scarf for a long walk along the river before an early night. I wanted the solitude to think about the Hard Problem. No such luck.

2

Smallville music, care of Janey the ironist: The Cult, Missy Higgins, Depeche Mode, Diamond Nights. Fragrant steak and tilapia cooking on a griddle. Salad dressing sharp with cider vinegar, garlic, and virgin olive oil. Laughter and babbling, people drinking soda, not many drinking anything more serious. A man I hadn’t seen in too long stepped through the door to the back porch, and I said, “Hey, Father Paul. Or is that ‘Monsignor’ these days?”

I felt a burst of cheerfulness, seeing Paul Westfall here, even if I was still angry at my parents for the inevitable party. He was outfitted in clerical black, must have flown straight in from Chicago especially for my birthday. A few months earlier, I’d overheard my father say, “So he’s wearied of treading water in the Holy See. Paul must be a major headache for them in Rome, L.C. They can’t canonize him, because he’s not dead. They can’t send him a writ of excommunication, and then burn him at

the stake, because—" L.C. had said sharply but quietly, and I wouldn't have heard her if I hadn't been deliberately eavesdropping, "Hush." My mother is pious to the point of mania, having been infected, along with Paul, by a charismatic Thomist at a tender, vulnerable age. Dad, not so much. Me, I'd announced my agnosticism at seven, then my embrace of full-blown atheism two years later, devastating Mom. But what can you do? This, and other things, flashed through my mind as the priest turned with his big smile.

"You can still call me Paul, for gosh sake. Good to see you, kiddo. Happy birthday! Here, gimme a Saul-and-Paul hug." We did the manly embrace, and he added, "That whole hierarchy thing is making a comeback in my diocese, hence the dog collar. Give me ten minutes and I'll be in a track suit like a human being. You're looking healthy. Working out?"

"Uh huh."

"Way to go. *Sans corpore, sans Mensa*, you know."

I gave a dutiful laugh. "Wit score, point five." Maybe 0.67, let's be fair. But already he was pressing his way through the crush of my friends, my parents' friends, college educators and hangers-on, probably a stringer for the local paper. No TV cameras, though, we're (carefully) not that newsworthy, not even dinky hand-helds, except for the Korean digital marvel my mother was deploying. She's a fiend for archiving everything, so for a while I picked the custom up from her. Hence, this record as well, I suppose. Hard to break the habit. I started a journal when I was eight, writing in rather bad Sanskrit, then burned all the piled up volumes when I was fourteen and puberty kicked in, however feebly and belatedly. Didn't start again. But here we are, seems I have, after all, but this time, as you see, under NSA-grade crypto.

Food was laid out alfresco on trestle tables, and I was munching shish kabob from a skewer while the old lady from next door expatiated on the breeding of daylilies (tetraploids, their male and female parts are large and easy to work with even for the arthritic, and their seeds are big lunky things) when someone grabbed me by the belt and started tugging me backwards. "Sorry," I said to the neighbor, "excuse me." And "What?" to Ruthie. Mysteriously and without expression, she handed me a small box wrapped in foil, and drew me into the backyard and around the side of the house. Scarf barked and tagged along. "Really, what?" I had the silvery foil off the matchbox by the time we reached the front gate, and the thing rattling inside was a car key. Ruth opened the gate and bowed me through. "For me?" I said. "I thought you didn't care."

It was a yellow Ford Focus hatchback, several years old, clearly secondhand, but in good shape.

"I know you won't believe this," I told her, "but I'm going for my license tomorrow morning. This is just what I wanted!"

"Of course it is," Ruthie said, and even by the pale street lighting I could see her blush. She punched me in the arm. "Don't kill yourself, okay?"

"Come on, get in." I opened the passenger side, tucked her inside, went around and climbed aboard, moved my seat back a little, let my hands rest on the wheel. Perfect. Just the sort of ride the 'rents would approve; low-key unnoticeable (yellow is visible, but that's a safety feature and anyway adolescents are flashy, right?), reasonable fuel consumption, not really enough room for wild sex parties, even if I put down the back seat and threw a blow-up mattress on top. Even if I really felt the urge to do so, which I was slightly ashamed to admit I didn't. Ah, peer pressure! "This is great, geekgrrl. You sold another patent, or something?"

"Royalties on. Don't know what to do with it, the stuff just piles up in the bank. I'd have gotten you a Lamborghini, but—"

"Yeah." I started it up, revved the engine once or twice, switched it off again, and

got out. I rubbed my hand over the roof. "Let's get something to eat before the greedy bastards have scarfed it all down." Hearing his name, Scarf the dog barked happily behind the gate. We went in and mingled. What a grrrl!

Before midnight, a handful of neighbors cleaned up, helped by the few Atom Kids who'd made it to the event. Ruthie's parents had already walked her home. The sound system was softened to bluesy jazz after everyone else had been politely, good-humoredly, but firmly shown the door. "Another school day tomorrow," my father had said. That was all the explanation needed in this neighborhood.

I loaded washables into the dishwasher, rinsed and stacked the recycle candidates, gobbled down the last of the pistachio ice cream, felt mildly sick as a result and finally, sighing, when Father Paul caught my eye, followed him into Dad's study. Janey had hinted at some Rite of Passage (she'd turned sixteen three months earlier) but refused by a dozen amusing diversions and one snappish outburst to tell me what to expect.

Mom and Dad followed us in. Marius watched keenly from the hall; nothing got past that guy. I heard the door click shut, and lock.

Relaxed in Dad's leather and tubular steel reading chair, an elderly gentleman in his mid-seventies was already in situ, wearing a suit and Harvard club tie, of all things.

Omg. The Patriarch. I was shaken, bewildered, gratified. I'd met him only once before, for a long discussion after my declaration of fervent disbelief in deity. After all, he was the powerful personality who'd persuaded L.C. to read Thomas Aquinas shortly after he saved her from a childhood of quiet desperation that made my daily troubles seem like a night at the opera.

"Hello, sir," I said, and held out my hand. I realized a moment later I'd said it in Tibetan and, shaking my head, repeated my greeting in English. Trust me, I urged with my modest demeanor, I'm house-broken. I don't really slay repugnant oafs on the school bus with a sharpened pencil to the brain. I don't even really want to. No, really.

His happy laughter rumbled. He rose, with a little difficulty, and in a gesture almost exactly like Father Paul's earlier in the evening, opened his arms. "Come on, you scamp. Give me a hug, and tell me how you justify your godless existence."

My eyes filled with tears. Who'd have thunk? But this man had brought my parents together, as children, in the dark days when—according to everything I'd read on the period—the heaving sixties were expiring into the early seventies in confused, sexually reckless utopian optimism, women and gays finding their voices finally, amid the last gasps of a brutal, seemingly unending war in Asia. A pointless war, part of my mind annotated automatically to itself, that ended in baffled defeat after twelve bloody years—and now, all these decades later, we were embroiled again in another apparently pointless war, had been for five years.

Was *that* the unavoidable outcome of a numbed, dumbed-down population with an average IQ only a bit above one hundred? Citizens who elected as their representatives men and a few women smarter than themselves, yes, by and large, yet lacking real perspective, most of them? Missing the aptitude to cast themselves forward in well-grounded imagination, to test out their proposed actions before barging into costly ruin? Was what I saw and heard everywhere, every day, just concerted stupidity run riot in a polity vastly larger than the cozy hunter-gatherer aggregations humans were evolved to deal with? It couldn't be that simple, could it?

There was more than a whiff of self-preening in that thumbnail analysis, and I knew it. Yet equally self-interested, concealed agendas held sway, I was sure, among the owners, the judges, the clergy, the warrior chiefs of labor and military, the imprisoned, the drugged, and the dealers in sedation. Yes, all that, no doubt—but still, what sort of person deliberately sets out to derange the larger part of the planet into violent hatred and opposition? Al-Qaeda and Hamas were not the only crazies at

that game. Was this widespread barbarity, too, a consequence, a manifestation, of the Hard Problem? Simply an inability to sense that other humans have interests and profoundly private *feelings* of their own, and potent beliefs, however delusional most of them had to be (since almost all were at odds with the rest)—an incapacity for that sympathetic resonance which somehow emulates the qualia of the deepest inward lives of their foes?

These fairly commonplace reflections, as I say, dashed like foxes pursued by hounds in my own inwardness, as I stepped into Dr. Herbert's embrace and felt flooding through me his kindness, generosity, concern for us all—and his ordinariness. His mental limitations, measured against two generations of his appalling charges.

And a part of me recoiled. I didn't *want* to know what it was like to be the Patriarch. He had made it possible for us to find a place in the world, had guarded us when we were most vulnerable, had filled the troubled and often squalid lives of the young Atom Kids with warmth and encouragement, had stood against their public enemies. And yet . . . his mind was small, narrow, constricted by the limitations imposed by his brain's natural genetic program. And I could not bear to imagine such restriction, the stifled qualia of such imprisonment. A pulse of horror passed through me.

And he felt it. His clasp failed, for a moment. He did not draw away, but I knew that a deep, abiding sadness must have bruised his heart at that moment. For, after all, this could not have been the first time he'd know such instinctive rejection. It was the cost and misery of his vocation as our mentor and protector.

"I'm sorry," I said.

He placed his hands on my shoulders. "That's all right, lad. It's your fate, this loneliness, this aloneness. I wish I could bridge it, Saul, but the barrier is too high. Still, we can be friends, I hope?"

I recalled, with bitter sharpness, something Father Paul had let slip once. Yes, we could be friends—as I might offer friendship to my dear pal Scarf, and he, in his loyal, hungry, restless, scurrying way, might offer his in return. It was a sickening realization. I tasted the bile in my throat, and then Dad was holding my arm, steadying my shaky legs. Unseasonable spring warmth had left the air. My ears rang. Mom brought me a chair, touched the back of my head lightly, and I let myself down. Dr. Herbert remained on his feet, alone. It seemed to me his features were carved in saddened resignation, an acknowledgment of loss beyond loss greater, perhaps, than any man had ever been obliged to bear.

"Sure," I said. There was a tremor in my voice. "Sure. I'm proud to be your friend, sir."

After a long moment, my father cleared his throat, and both my parents, by turns, with a word here and there from the Patriarch, started to explain things to me.

We second-gen kids already knew the atomic radiation legend was bogus, not to mention ludicrous, despite the *X-Men* franchise that seemed to capitalize, distantly, on our leaked cover story. How could a blizzard of alpha particles and neutrons sleeting at random through the bodies of unprotected researchers all create *precisely the same mutation* in their offspring? Chemical mutagens, yes—radiation, not a chance. Getting a major REM load is like being sprayed with machine-gun bullets, not tweaked by exquisitely targeted tweezers. That required deliberate insertion of modified genes, which, they told me, is what had been done back there in the Above Top Secret Los Alamos Biowarfare Unit to our pregnant grandmothers, using fragile and primitive techniques nobody else would replicate (or at least publish) for years.

I thought this was ridiculous, about as likely as hearing that we'd been created as hybrid UFO aliens. The genome project was still limping—well, galloping—toward closure half a century after this miracle of gynecology was supposedly wrought. L.C.

flicked on the computer and called up a brisk briefing for me. Holy cow. I read it over her shoulder, flicking down pages with voice command.

The first “test tube baby” IVF was announced to the press in 1978, twenty years after the Atom Kids were conceived. And there was nothing modified about little Louise Brown, of Greater Manchester, England, except for her very existence. (The poor Indian guy who produced the second IVF child known to history was hounded by his purblind and moralizing marxist Bengali government, and killed himself several years later. Another class of motive for keeping all this hushed up, maybe. Humans do seem to love rushing about with pitchforks and blazing brands. “Burn the witch!”)

But, obviously, classified work had been going on much earlier than that.

“Shortly after the end of the Second World War,” Mom told me, even as I speed-read the details, “Dr. Min Chueh Chang moved from China to Massachusetts and started working seriously on fertilization.”

“The contraceptive pill,” I muttered.

“Ironic, yes. But he and his colleagues found ways to create life as well as suppress it.” I expected a mini-lecture on the wickedness of unnatural tampering with God’s plan for human life, but I guess she knew I had it memorized. The images jumped on the screen. Cold shock technique. Sperm capacitation. Genetic recombination. The door was opening for—

Wait a moment. It had already been opened as far back as . . . 1935! Chang’s colleague, Gregory Pincus, had fertilized rabbit ova *in vitro*, but few believed him. His work wasn’t recognized until around the time the first “Atom Kids” were born. Interesting timing! Clearly some observers had been paying attention.

“Meanwhile,” Mom was saying, “from the moment Crick and Watson clarified DNA’s helical structure, and then cracked the code, a black team at Los Alamos was building on Chang’s work.”

“Plasmids,” said Father Paul. I turned; he’d come quietly into the study and relocked the door behind him. The adults regarded me with a sober solemnity I rarely saw in them. “Josh Lederberg was already doing good work in the late forties on bacterial conjugation. He and his wife Esther shared a Pasteur Medal in 1956. Outstanding work in microbiology and genetics.”

And on my parents? Maybe not—but someone else had followed swiftly in the Lederbergs’ tracks.

“Plasmids,” I repeated. Biology was Ruthie’s stomping ground, not mine. “Little rings of DNA or something, right?” You could insert them into cells, and they’d start pumping out their own specialized proteins—or sneak into the nuclear DNA, where with luck they’d take up residence.

“Hence bacterial conjugation. Syzygy,” said the Patriarch, and he broke into a smile. “That’s what we called it back then. No sex, but as good as.” He shot Paul an amused glance, and got a faint frown in reply.

“I thought that had something to do with the moon. Syzygy, not sex.”

“Well, Saul, yes, it does, but that’s a different sense of the word. This isn’t astronomy, I assure you—nor astrology, neither. It was dirty, but it worked—some of the time.” Paul looked grim. “It also killed seven women, and dozens of babies. They had *no right*. . . .” He broke off. “Well, different times. Nuclear weapons were the doomsday disaster poised to obliterate all life. You’d probably heard about the CIA medical experiments on black prisoners?”

I nodded. No words necessary. The screen flickered under Mom’s finger clicks with officially mandated horror. Two hundred women infected with viral hepatitis in 1950, so the military might learn what would result if evil communists turned to germ warfare. Fifteen years later, just to be sure, another doctor repeated it with re-

tarded children living in Staten Island. Live cancer cells shot into prisoners at Ohio State Prison by Sloan Kettering researchers in 1952. From the early fifties to the late sixties, Project MKULTRA craziness using lysergic acid and electroshock that damaged Canadian patients beyond any hope of recovery, on behalf of US intelligence researchers. It was all too justifiable. It's the Cold War, stupid. What other excuse did you need?

And it hadn't stopped with the McCarthy hysteria. I kept speed-reading, unable to look away. In 1967, when Mom was eight years old, more than five dozen prisoners in California were injected with a terrifying substance, succinylcholine, that made them feel that they were drowning in their own fluids. Waterboarding by any other name. Five of the prisoners refused permission, and were injected anyway, against their protests.

I'm pretty sure I was looking green around the gills again. I sagged against the back of the chair, and L.C. got out and spun it around for me to collapse into.

I looked at my Mom and Dad and . . . I know it's vulgar, and trivializing, and entirely unjustified, but I felt a horror movie shiver, I did.

"So you're—genetic experiments? And I'm what? Son of Frankenstein?"

"Not exactly," my father said. "But close enough." His grin seemed a bit strained; he was profoundly uncomfortable. One arm went around Mom's shoulders, and she leaned against him.

"The plasmid autoinserted into the nuclear DNA," Paul told me. "It's heritable. To some extent."

"So nobody had to screw around with *my* genome? Wow," I said, heavily, "imagine my relief."

"You'd be surprised how minor the changes are," L.C. said. "Mostly it's an unstable CHRM2 allele, plus downregulation of a dysbindin SNP." I heard it as "snip" and at that stage didn't know how to unpack the rest of it. We might be geniuses, but we have to read something to remember and understand it, and as I say I'd tended to delegate microbiology to Ruthie. Shockingly sexist, no doubt. "It's like the small modifications that caused the chimpanzee to go in one direction and *H. sapiens* in another. In this case, an extra cortical rind added atop the six human layers of cortex, thicker and more numerous axonal connections, some neurotransmitter oddities. It doesn't always," she added, with a glance she deflected even as it began, "breed true."

I had known all my life that I'm not remotely as smart as the Atom Kids. Sure, beat the academic pants off a Cliff Dolejsi; run circles from infancy around children three times my own age (but it was getting a little harder these days), yet I had to admit that I just wasn't transcendently brilliant like the 'rents. At my age they'd been publishing biographies and novels and advanced theses in math and poli sci. Ruth had her software patents, true, and I'd published that fat fantasy trilogy before I got tired of reading made-up stuff and disgorging imitations, but I wasn't hearing anything unexpected. Still, it stung. It stung like a son of a bitch.

"Regression toward the mean," I said.

"Absent any extra modifications, I'm afraid so. And worse than that—most pregnancies in our group kept miscarrying. We all tried desperately for ten years or so, then Kuzi finally worked out the haplotypy problem and we . . ." Mom trailed away.

"It's an inbreeding problem, mostly," Dad told me. "We found a way, but it involved some sacrifices."

They were all looking at Paul Westfall. His face did not move, but his eyes fixed on me.

"With the help of good old nature, and nature's God," he said. He crossed the room to me, took both my hands firmly in his own. A thumb closed over the knuckles of my right hand in a firm, professional clasp, the deft grip of a man who'd never done any

real physical work in his life, never worked combinations in a dojo. I'd seen that thick, blunt thumb shape before, every day of my life. How could I never have noticed? He smiled, finally. "Yes, Bud, belay what I said earlier. You have every right to call me father."

Was I angry?

Hell, yes.

I swallowed down that anger, because it's what we'd been trained to do, and because, really, I loved the guy. Paul Westfall was the first of the Atom Kids located by Dr. Herbert, and perhaps, by all accounts, the brightest. He'd done as much as anyone in rounding up the rest, easing them, one by one and then in concert, through the trauma and triumph of their self-discovery, their redemption from extremity and bitter isolation. In the joint foolishness and longing for absolutes of the Patriarch's medievalism, he and L.C., my mother, had cultivated their immense minds into a shared *folie*, but hardly a radical one, an architecture of belief and worship shared, after all, by many of the finest minds in Western history, and even today by a large percentage of the planet. I'd confronted or avoided their faith for years, in a mutinous but largely unspoken resistance. Not hostility; how can you turn against the woman who gave you birth? But they both knew the antagonism I nurtured toward their beliefs. And now—

—*No more than a hypocritical imposture!* raged the furious two-year-old locked inside me. Faked piety! Bogus fidelity to spouse and church!

Knowing, even as the spasm made my arm tremble and withdrew my hand from his, how unfair, reductive, patronizing, *adolescent*, for God's sake, I was being.

Qualia, I noted. I noticed that abstract fact from a higher, remoter part of my aggrieved self. Bursts and gusts of feeling, trammelled as swiftly as they arose in rationalizations and language games. Yet how could *that fury* be calculated, specified by neural algorithm, traced back to Darwinian adaptations and Machiavellian maneuvers? Well, easily enough, in fact. I knew that. But the logic tree of abstractions didn't *feel* true.

Deliberately, I shut down this noisy inner babble. I turned my face away from the Hard Problem and from the present instant's merely Absurd Problem churning in my mind and body.

Yeah, you bet I was angry.

"I'm going for a walk," I said, turning away from them and opening the study door on a quiet house. Nobody waited out there; even Marius had gone home. "I have to take Scarf out for a crap."

My mother and father, and the priest who was merely my sperm-donor, *in vitro* or *in vivo* I didn't care, and their aged Patriarch, they all four let me leave, in silence, and without reproach. Well, I suppose they were getting used to it. Emotionally, we are all quite simple creatures, *H. sapiens*. and *H. novissimus* alike.

I found Scarf's chain on its hook and went out into the cool of the night, my dog capering happily at my heels.

3

I destroyed the intervening entries after my crisis with Maxine. Just couldn't bear to read all that protracted late adolescent *Sturm und Drang*. I've decided to pick it up again—I owe it, arguably, to the dead. So let's start with an instant recap:

I fell in love at last, or so I thought at the time, four years later. Maxine Bukowski wasn't one of us, but she was fearsomely bright, by her own standards; she danced like a flame caught in a light breeze, and her hair was the tawny flame of triploid

cultivar daylily *Hemerocallis fulva*. So much of my life had to remain concealed, partitioned, which tortured me, and Maxy, too, at some level of masked perception she wasn't able to deny. One day she found the three paperbacks of my *Starlight Genera* trilogy, which I'd written over a long school holiday when I was thirteen and published as Peter Regan two years later.

"What's this? Not the kind of thing you usually read, Saul?"

I was distracted with circuit design. "Uh, a friend gave it to me. He wrote them."

Leafing through the opening pages, she hummed a jazz tune. "Hey, this isn't bad. How come you've never introduced us?"

"That's not his real name. He's embarrassed, I think."

"Can't see why. I hope he made pots of loot." I saw her settle into my big chair, flipping pages fast. After a while it got dark, and I flicked on the overhead fluoros. Maxine was halfway through volume two. I squirmed, but secretly hoped to hear words of praise. By the time I shut down and showered, and pulled her to me on the bed, she was polishing off the final book. "Hey, that was fun."

"No, *this* is fun," I said, and it was. But a couple of weeks later she found a mint copy, in a sealed baggie, of Jeri Steiner's *The New Astrologies*. "Oh my god, Saul, wtf?" (She spelled it out, as people did that year.)

"I'd rather you didn't open—" But she had unsealed the bag. "That's an investment, sweetheart. Pennies today, zillions in half a century."

"Not funny." She blew a raspberry, and starting reading down the contents page, in a sarcastically excited yet dazed rendition of a diphead: "Ethnoastrology. Neuroastrology."

"That's my favorite," I said, and tried to grab it from her. She squirmed away. "I googled it, and of course neuroastrology.org and neuroastrology.com were domain names. Luckily, they'd expired."

"Luckily? But wait, there's more: Relativistic astrology." She laughed a little uncertainly. "I love it! Astrology at the speed of light. String astrology. Does that included brane astrology?"

"Brainless astrology, I imagine," I said, getting nervous, watching a contest inside her between humor and censure. "Look, can't we—"

"Genome astrology. Demon astrology. Non-Euclidean astrology. Galactic and of course for extra credit extra-galactic astrology. Dark matter astrology. *Dark matter astrology!* Wait, wait! *Dark energy* astrology. Post-poststructural astrology. Oh, Saul, this has to be a send-up. Green eco-astrology. And lastly, virtual astrology."

"The universe as a computational simulation. Don't mock it unless you've tried it. Have you never read Bostrom or Tegmark?"

"I saw the *Matrix* trilogy." Her mood settled. "No, it's really not funny. This Steiner woman is preying on the vulnerable."

"On the intellectually underpowered but pretentious, anyway."

"It's gross, Saul. What are you *doing* with this sort of iniquitous dreck hidden under your bed?"

I made my first and last mistake with Maxine. "I wrote it."

Aghast. "You *what?*"

"I co-wrote it. Dictated it to the machine. With Marius. One day when it was raining heavily. Don't hate me, babe. We made more money than you could imagine. Pots."

Now she wasn't laughing. Or smiling. Maxine, my beautiful tawny lily, put the book down on the bed as if she needed to wash her fingers, and got dressed. She left. She never came back. I cried quite a lot, and ranted at Marius, and sobbed on Ruth's wearable-cluttered bony shoulder, and got over her, eventually, when I met Andrea. And learned, even more than I'd learned before, to keep my damn mouth shut.

But I wondered, as always, and now even more poignantly: What could it be like to be a Maxine Bukowski? And what would it be like for a Maxine to discover, though unimpeachable direct experience, what it's like to be a Saul Collins?

What attracted me to Andrea was her playfulness. Well, and her short dresses, but hey.

I was sitting at the back of a dizzyingly canted lecture theater trying to remain focused on the most boring neurophysiology presentation the world has ever known. Herr Doktor Professor Faxon Bander is one of the great experts in cortical structure and connectivity, but if his presenter skills were an index of his surgical prowess, he'd be doing serious time in the Big House. I yawned. I shuffled my feet. I parsed into Farsi everything he was saying four or five times. I'd known all this stuff backwards and forwards, which is pretty much the way he was presenting it, since my early adolescence, but the geniuses in charge of the course insisted that all Ph.D. candidates must audit every lecture. On the blank pad under my left hand, I scribbled *Much more of this backing and filling and I will run down and kill him with my bare paws.*

A snigger, and a bare female right paw wielding an old-fashioned fountain pen, fashionable again that year, reached across and scratched on the pad *This toing and froing.*

I did not glance to my left but wrote *Hither and yoning.* A tiny bit of naughty under the surface. Was that embedded *yoni* too racy? I hoped she was not a nun fluent in Sanskrit. *Hi-ing and lo-ing* wrote the woman's hand. I scribbled *Inning and out-ing.* The hand instantly annotated *Upping and downing*, hesitated a moment, and then went back to add a *T* at the start. A fan of Shakespeare, I thought: *Othello*, Act I, Scene I. A nicely ribald sense of humor, which allowed me to relax a bit. This time, finally, I shot a glance her way. Green amused eyes met mine. Older than I, but perhaps not by much. She was not beautiful in any conventional sense. I felt my heart lurch, and other parts. Awake the snorting citizens. I wrote *Sniggering and snorting*, and left my hand resting on the pad. She wrote *No time like the present. My name is Andrea.* The smooth back of her hand brushed my wrist. In a moment of shivery delight, our qualia fell into synch. Stayed that way, for a while.

Busy, busy, busy. I should pick this up again. Oh, Ruthie, Ruthie.

After the first commercial 1024-qubit adiabatic computer was released by D-Wave, a Canadian company, several years later than anticipated but sooner than the doom-criers of vaporware had gloomily warned, the four of us bought one outright with our research funds and had it shipped with extreme care to my neurosci lab. (I was completing that doctorate under a friendly prof who'd known the Patriarch for years and asked few questions; it was helpful, despite the tedium and inconvenience, to patch into the university's infrastructure.) The potential power of the thing was breathtaking, if Ruthie could get her software to run right. In principle, the number of states it could address simultaneously was greater than 10^{300} . The number of atoms in the entire observable universe was a comparatively minuscule 10^{80} .

We'd decided on an end run around the philosophers. We were building a Qualia Engine.

That name was our nod of acknowledgment to Dean Charles Babbage's marvelous nineteenth century designs of a pre-electronic mechanical Difference Engine (a sort of programmable clockwork computer, never built until enthusiasts put one together a century later) and an Analytical Engine (a genuine Turing machine). Aside from the raw grunt of the quantum computer we'd put at its core, our device—our congeries of cobbled-together devices—more closely resembled a magnetoencephalo-

graphic scanner, and in fact used a shrunken version that fitted over the upper body, and especially the scalp, listening for traces of . . . feelings. Affective responses to the outer empirical world and the inner subjective world of imagination. Qualia.

"Oh the quale machine," sang Janey, deliberately mispronouncing it to rhyme with *Quayle*, like the late Vice President, "the quale machine, it reaches inside where nothing is seen. It knows if you're happy or feeling mean—that wonderful, sensitive quale machine."

I couldn't let her get away with that. "You're a deeply ignorant woman, Jane. Those are not the lyrics of the song." I ad-libbed, "It goes like this:

I'll parlay my quale
for a look at your soul,
and a ride on your Harley
in the back streets of Bali,
as long as your hol-
ism isn't reductively
loitering palely,
like watery gravy,
at the lee of the sea, be-
cause—"

She clipped me over the head, and settled back into the MEG sensor web of superconducting quantum detectors, excruciatingly sensitive to the ten femtoTesla magnetic fields of the neocortex in working order.

I shut the door and went back into the shielded control room.

That year, Harvard was still working on a *Mus* connectome, using an automatic tape-collecting lathe ultramicrotome. Not recommended for human brains, or even mice, if they are still alive; it sliced its way through a brain, imaging in three dimensions as it peeled, creating with each chomp a twenty megapixel record of every synapse and its precise location. The Allen Institute was working toward a brain atlas using *in situ* hybridization. We planned to achieve much the same effect in a *non-invasive* scan, creating an instantaneous massive entanglement between each molecule in Janey's brain and a separate dedicated register in the superposed state of the computer. No, we weren't trying to upload her consciousness onto an inorganic substrate—just create a static map of one person's momentary memories, sense impressions, plans, and . . . feelings. No point futzing around for years with murine qualia. Those dear little mousy critters are quite complex, in their way, far more so than the stupid psych behaviorists assumed back in the day of the Atom Kids, but still not up to scratch for the questions I needed to ask, the puzzles I hoped to resolve.

But let's pause a moment.

As I look back over this interrupted and partly sanitized or reconstructed record, "Peter Regan," the fluent author of the *Starlight Genera* trilogy hesitates, abashed. Far too much Tell here, not nearly enough Show. My predicament is that I don't really know whom I'm writing this for. Is it my peers—hi Janey, Marius, Mom, Dad, you other *Homines novissimi*? Not for Maxine, long gone, nor for Andrea, sad-eyed lady. To the memory of Ruthie? Not really. I'm hardly the group's archivist. Perhaps for some later generation who wasn't here and now? I suppose, eventually. As an explanation, an *Apologia pro vita sua*, to *H. sapiens* readers, sometime soon, or maybe not for years? I guess that's the audience I've had in the back of my mind all along. We went underground out in the open precisely to avoid that kind of explicit engagement—but hey, maybe things will change.

I could go back a few pages and insert an exciting expository conversation with

Maxine as we rappelled down the face of the Empire State Building in driving snow, or during the successful bid by Andrea and me to prevent terrorists from nuking the Large Hadron Collider in Switzerland, and maybe that's the way we'll do it in the movie, but let's get a grip and cut to the chase. When I was "Peter Regan," teaching myself to write blockbusters, I scouted the web for rules of narrative—and one prohibition I learned early was never to dump dollops of information and backstory through the pitiful contrivance of characters telling each other stuff. "As you know, Professor . . ." But hey, this is my personal journal and I can do what I like, and it's directed finally to an uncertain audience. So—

The standard human brain has a lot of housekeeping and motivational apparatus tucked away in the middle—thalamus, hippocampus, amygdala, blah blah, thank you, Prof. Bander—along with cavities surging with transmitter-rich circulating fluids, wrapped in what amounts to a large dinner napkin of neocortex crumpled up to squeeze inside the skull. Data lines run in and out from processing brain to torso and limbs and back, a million or so fibers from the eyes, an equal number from the muscles and the touch sensors, as few as thirty thousand dealing with auditory sensations. (So a picture is actually worth 333.3 words.)

The two-millimeter thick cortex is where the heavy lifting is done among you brainy apes. Just consider this for a moment: a sheet of tissue no thicker than six stacked envelopes, stripping down a bit-torrent into schemas and holons, each cortical layer abbreviating and abstracting the incoming from below until finally the top layer, with its plethora of far flung connections, deals in a world of invariant representations very far removed from the jumpy, jittery, scatty flood of inputs that assails us every waking moment—but those invariant abstractions *match the structure of the external world*. Carving the world at its joints, as Plato put it in the *Phaedrus*. (That Plato detail won't be on the exam.)

What the *H. novissimus* plasmid genes do is persuade a growing fetal brain to add a seventh layer to the neocortex, plus a whole lot more synaptic connections. But wait, that's not all. They beef up the brain's ability to prune any coincidence links that turn out to be poorly informative or actively misleading. You *H. saps* remain stuck with a brain prey to illusions and superstitions, because your traditional gray matter assumes, as its default, *post hoc, ergo propter hoc*. Often that's justified. Just as often, it's a highway to gut-churning errors ardently embraced and enforced, provoking sectarian hatred, bloody war, and the purchase of expensive sports utility vehicles hardly anyone can afford gas for. But wait—I hear you object—wasn't I just bellyaching about Father Paul's equally baffling embrace of the Roman dog collar, and L.C.'s devotion to a belief system nearly as absurd as Norse worship of the cosmogonic cow Audhumla? Yes. I admit it. Even the Atom Kids are prey to emotional attachments and rushes of feeling to the head. They're trapped, when all's said and done, by their qualia.

The way Ruthie died was unforgivable: stupid, stupid, heartbreakingly stupid.

I was still driving the aging Ford Focus, her birthday gift to me when I turned sixteen. It did the job, didn't require explanations. She didn't drive. That night Andrea was at the Pillbox until late, rehearsing *Mother Courage*. She'd dropped out of neuro; somehow I'd discouraged her, hadn't meant to, I swear. I was taking Ruth home from the lab. By then she had so much hardware hooked up to her wearable ensemble that most of the time she might as well have been flying through Second Life. Ruthie had never been scanned by our juicy system, because it would've made a mess of her onboard equipment, which in turn would have munged ours, probably.

On one level, her connection to reality was larger than mine; miniature LEDS cast a non-stop data feed into the upper visual field of both eyes, her fingers danced a cod-

ing echo in sim space via the thread transponders printed on the back of her hands and wrists, music and other chopped, sped-up acoustic feeds went directly to her mastoid bone. I never tried it directly, but a sim-set let me emulate a pale shadow of the experience (or so she said, disdainfully), and it was a Niagara of noise even my much-vaunted seventh cortical layer couldn't quickly reduce to meaningful pattern. Ruth followed a dozen RSS feeds along a hundred, a thousand blog links; she attended the launch of the first Chinese moon orbit, a remedial operation on the cleft palate of a five-year-old girl in Tanzania, a football game at Notre Dame (she liked the hunks), the stock market streaming quotes and NASDAQ Level II negotiations. . . .

What was it like to be Ruthie? Like drowning in the world, or like surfing atop its oceanic wave. Yet her focus was intense. I think she was the smartest of us, maybe as smart as the Atom Kids our parents, and with the incomparable advantage of thriving in an epoch when the parallel quasi-intelligence of the web gave everyone entrée to everything anyone had ever said, written, painted, shaped, made manifest from their thoughts and dreams and hungers and schemes. For someone as glowing as Ruthie, that was a free one hundred points of IQ on top of the icing.

I turned with the green light, carefully, maybe too carefully, and the benighted fool with his lights off, his cell phone stuck in his ear and his small anthropoid brain in neutral went into the side door at sixty, maybe, according to police analysis, caved the steel and glass into a jagged fist that slammed Ruth so hard her brain caromed off the inside of her skull and . . . broke, bled, died.

Somehow I escaped with only a cracked ulna, shock, and the kind of furious agony that never goes away, never, never, just ebbs bit by slow shuddering bit in weeks and then months of grief. It would catch me at moments as I sat alone (Andrea left me when my bitterness turned, unfairly, against her, as it turned against everyone who tried to comfort and sustain me, and drove her away), it would bring up choking sobs that were her name, somewhere in the swimming light and the snot and thickened juices of my throat. It lacerated some protected autistic part of me I'd never understood was my emotional protection against a world where I didn't belong.

I wanted her back.

"Give me back my Ruthie," I said aloud, in my empty living room before the meaningless jabbering TV, and wept, and nobody answered, because she was gone and could never return.

It wasn't as if I'd been in love with the girl, the woman. I know why, too—in effect, we were "kibbutz siblings"; she was out of emotional bounds, like Janey, due to overexposure at some pivot of childhood. Maybe Piaget could pinpoint it, or Bettelheim. Fond as I was of little Ruth, and I was—I loved her with all my heart—it was not a sexual bond. It held no magical spark. She was not Maxine, nor Andrea. But losing her really did tear an ancient scab off my heart, or maybe punched through a defective barrier I'd had cloaking it since childhood.

I wept as we buried her in the old Catholic church where Father Paul laid her crushed flesh to rest (Ruthie was an atheist, like me), and when the moment came for me to approach the front of the gathering and add words of remembrance, I simply could not do it. My heart was poisoned with rage and grief, and it rose to block my mouth. It blocked my heart against Andrea, too, and I did not know why that should be. I stood beside her at the grave, mute and useless, and felt nothing but wretchedness.

Later, later, I understood what had been done for me in that tragedy. I will hate that drunken fool until the day I die, and carry his name in wrath unspoken before me, but his wicked stupidity was the occasion (and how I wish it had been otherwise, that I could turn it back and make it not happen) of my admission into the mysteries of the Qualia Engine.

“Power,” I instructed Marius. These days he was playing a thirty-string guitarangi da Gamba in a band called The Fluting Opera (they did no opera, and there were no flautists) and slept very late, but always came over to the lab, even early in the morning, for big occasions. He toggled the board. Lights went from red and yellow to green or white. Overhead, there was a perceptible flicker as we drained juice from the building’s transformer.

“It’s alive!” Marius cried in a maniacal voice that echoed inside the acoustically shielded control room. “It’s alive!”

I shot him a grin, then ignored him. Janey was poised at the edge of a second-order phase transition, with cortical correlations and anti-correlations extending across her entire brain. At criticality, the phases would collapse together in a series of neuronal avalanches. With luck and exquisite timing, we’d capture a time slice of Janey’s soul, and port it to the D-Wave box. I switched my microphone on.

“Think of a butterfly lighting on a day lily, Janey,” I suggested, and displayed a stereo picture of a gorgeous zebra swallowtail drifting past a tiger lily in Mom’s garden.

“Yo,” she said, drowsily. “With warm breast and with ah! bright wings.”

It took me a moment to catch the quote: Gerard Manley Hopkins. Over the bent world broods. Yes. I activated the scan.

Diode lights went on everywhere.

“Mirror neurons,” Janey said, and Marius nodded. The boyish chubbiness, I noticed absently, had lately drained from his face; there was a firmness in his cheeks and his jaw.

“They’re big players in the qualia game,” I agreed, “but we’ve been through this before.” Dedicated F5 cells in the premotor cortex. Monkey see, monkey do—and presumably monkey feel the same raw feels. Trust me, urged the politicians, I feel your pain. But was that all? The Peggy Lee standard that my Mom used to croon drifted in memory: *Is that all there is?* “The neurology of emotive reciprocation is a *prerequisite* for empathy, sure—”

“For even the *simplest* appreciation that other people have feelings,” Janey said more loudly. “That their experience is akin to our own. To *my* own. To *yours*. However oddball each of us is, and I think it’s clear that when it comes to odd, you, my dear Saul, take the—”

Beneath the good-natured banter, I felt a current of frustration and even animosity. This was *my* project, finally; somehow they’d allowed themselves to be roped in, years ago, and all we had for our thousands of hours and millions in investment was a machine, an engine, that did just what evolved mirror neurons did in an ape: echoed back, mirrored, what it saw. Seized, or rather embraced, a frozen instant of a soul in very ordinary passage. Less than ordinary, in fact: lying on your back, or propped up on a padded chair, sniffing a rose is a rose as sweet or attending to Delius in a country garden or tasting jalapenos, capsaicins burning the front of your tongue . . . these qualia were vivid enough as you experienced them, and worthy of capture and butchering on the analytic bench—but was it science? In the true sense: was it knowledge that eased open the universe a little more readily to our human grasp?

I felt my throat constrict. Fear? Anxiety, at least. I must take the next step. This was the key commitment we’d been working toward all these years. In a sense, Ruthie had given up her life for it. I had to patch into someone else’s qualia and run them through me in the most intimate embrace of another’s experience the world had ever dreamed of, outside delusions of spirit possession. Mom or Paul, it occurred

to me, would probably be more at home with this prospect than I, soul believers both. The thought made me shiver and clench my toes. Yes, Oedipus, step right up to the scanner. But that risk was well in abeyance; none of the Atom Kids knew about this project. Quite a lot we never told them. Poor supermen.

"Cut the crap," I said. "Let's roll."

The MEG imager room uses active shielding, a nested set of aluminum layers wrapping a one mm. sheet of high permeability ferromagnetic alloy. Inside that safe, quiet barrier, the MEG listens for the fragile magnetic fields generated by ionic currents in the brain's dendrites as synapses pulse out or swallow their neurotransmitter messages. The signals it registers are foully dirty, the babbling from hundreds of adjacent cortical columns conflated and run together, so we cleaned them on the fly with a Bayes classifier and k-Nearest neighbor machine learning algorithms. All this took place at the interface between the D-Wave kilo-qubit processing units and a living brain—in this case, mine.

I thought again of Ruthie. But it was Janey's qualia I was about to . . . what? Emulate? Re-run? Instantiate, that's probably the *mot juste*.

I was drowsy; we used a low dose of diazepam to settle the butterflies. (Swallow-tails winging across bright daylilies! My zonky mind skittered.) I moved lips that seemed thick and heavy. "Hit me, maestro."

It was—

Faintly sickening, like a moment of vertigo, peering over the edge of a tall building and waiting for your confused eyes to focus on the tiny vehicles creeping past below. The double vision didn't correct itself at once. A photo flashed into the display above me. A hairy dog running beside waves, golden sand spraying up from his galumphing paws, tail high, grinning mouth open, tongue flapping and moist in the brilliant beach sunshine. "Scarf," I started to say, and knew at the same moment that this was Mousy, my grandparents' beloved dog, when I was five, visiting them in Fort Lauderdale, and—

That wasn't my memory. Nor my perception. And the colors were wrong, a little off. The reds were a tad flatter, somehow, and the yellows glowed as if in a heightened, pushed Photoshop rendition. Then hues swerved back to the spectrum I was used to. Erp. Oops. Next picture. Fruit in a gleaming bowl, on a table I remembered, one of us remembered. I'd knocked it over when I was three, climbing from chair to tabletop against Mother's strict prohibition, and it shattered into shards of light that stung. . . . Not my memory, either. But it resonated with my authentic recollection of tearing off sheet after sheet of toilet paper and dumping it in the toilet bowl, then lighting a match and throwing it in. The sharp stink of the match igniting, the slow blue-edged spread of flame across sagging, sogging paper, the rising thread of black and merry, gray smoke, the sudden terrifying racket of the smoke alarm, L.C.'s frightened, angry shout—

We're not that different, I thought, and my mind wrapped itself about Janey's memories, her guesses, her being. I looked up at picture after picture in the stimulus display, falling more and more deeply into resonance with her soul, I suppose you'd have to say, jolted back out again from time to time (the weight and heft of breasts as I jumped, smacking the volleyball hard, cramping in my guts with my period, the pleasure of lightly coating my pouted mouth with lipgloss of *just* the right color, the faintly heavy sweet odor of that gloss in my nostrils, those three savage hours of Britten's *Peter Grimes* at the Met), but all of it no more, really, than a visit to a museum exhibit, a wonderful holographic or (somehow) articulated waxworks display of a mind and body caught in one timeless moment—

"Here are some people you know," said a voice. Marius, I supposed. Not Paul, my father. But there was Paul's face, and again from another angle, snapped at different

ages, hair never too long or short, never the rebel, Paul, always the good dutiful boy who accepted his responsibilities with grace and endurance, but wasn't it a little odd how sometimes, in the right light, with his mouth held at that angle, he seemed so much like Saul—

Marius, defiant at six years of age, when they'd decided to send us to conventional schools, the Atom Kids had, explaining how we must try to fit in as best we might, not boasting, not showing off what we knew, our skills, our odious specialness, must learn *how to be them*, dear god, to absorb and mimic the qualia of their limited lives, learn that their hungers and heartbreaks were no less agonizing to them than ours to us, that their joys called for respect and happiness shared, that—

Ruthie's face, and she was gone, gone, half-cyborg, half sweet sharp-tongued angel, never to grow through the rest of our life together, never to have our babies together as, girl to girl, we'd promised each other— But that was Janey's recollection, channeled like the whisper of a ghost to my memory, my clenching, bitter gut—

Janey, now. My clever friend. My sister. My companion. My—

Oh, oh, oh. Like a cruel light flung in your blinking eyes. Unable to turn away. In-supportable. Had her qualia been utterly impenetrable, if the machine had worked but shown that we inhabited dissimilar inward realities—that would have been disheartening, the waste of years and effort, but this was—

I was scalded by her incandescent love. The richness of it was a wave crushing my petty pragmatism, my small resentments against L.C. and Paul.

The pictures had moved on. Kuzi, the Patriarch, all the rest of them, but I was floundering.

"Turn it off," I said. "For god's sake turn it off."

There was Janey, beside me, practical, matter of fact, pulling the sticky squid contacts from my head and torso. I watched her sensible face. It was impossible to reconcile my inward knowledge that she was profoundly, achingly, in love with me, had been for years, had never said the smallest word or given any hint because Ruthie—

"Thanks," I said. "We can do a debriefing in a few minutes. Have to be . . . by myself for a while," and stumbled to the rest room, perched on the toilet seat. I was thinned by her absence from my doubled soul, by my self-knowledge that, to me, she had never been, can never be, anything more than a pal.

"Oh shit," I muttered. "What the hell am I going to do?"

Reality came back into single focus. I had to stop her from undergoing a reciprocal qualia immersion. It would devastate her, I told myself.

A dying echo of her soul inside mine gave a derisive laugh. Get *over* yourself, Saul Collins. You condescending, sexist little man.

But that, too, was just a slice of the complex reality.

I washed myself quickly, making the water run as hot as I could tolerate, then as cold, splashing myself back to myself, then walked to the control room where they waited for me.

"Hey, Odysseus," Janey said, and sent me a sad smile. She knew. She had known, of course she had, what I would find there. I shook my head.

Marius glanced between us, rose casually and left the room. "Later, dude."

I looked at Janey, and she looked at me. "Hey, Jane," I said. "Hello, my dear friend." Eyes misting, I waved one hand at the MEG control panel, at our Qualia Engine. "You'll have to take it for a spin."

"Jump right in, huh?"

"Sure," I said, mixing my metaphors, "the water's fine!"

We went out arm in arm, as friends do, qualia humming in us, to where Marius cooled his heels against a corridor wall, and headed off, all three, toward The Gentle Pizzeria to eat something disgustingly wicked and clogged with cholesterol. ○

DOING SPLITS

1. Splitting Headache

What goddess is banging
On the bone
Hellbent on being born?

2. Split Second

Splitting Seconds
Is hard labor
In the Time Penitentiaries.

3. Splits and Sodas and Sundays

I could do with more Sundays
Each with a big fat maraschino
And the comics in color.

If I could have a month of them
I could get up late for all of them.
I could go through scoops
Of all the flavors
Three at a time
To each banana.

4. Split Infinities

You can't split infinity.
It's still infinite.

There is always more space
To boldly go in.

—Ruth Berman



Robert Reed's October/November 2008 novella, "Truth," is currently a finalist for the Hugo Award. The author tells us that at least twice during the writing of his latest story, "characters that I thought belonged to me suddenly did what they wanted, not what I wanted. And I was left trying to figure out what was going on." The result of this interference was a charming tale about all sorts of . . .

CREATURES OF WELL-DEFINED HABITS

Robert Reed

For a creature of well-defined habits, Hogan was admirably indifferent to the details of his life. I have known a few of the Old, and most of them keep precise hours—routines are their most precious possessions, and their capacities to surprise anybody, including themselves, is virtually nonexistent. But that wasn't the case with Hogan. The exact moment and means of his arrival at the Shop were always in question. Some mornings, he drove. On bright cool days, he might ride his high-wheel bike. Or a trusted friend would bring him in a car or ultralight plane. Or perhaps he would appear inside of the flywheel streetcars that were resurrected a few years ago—nostalgic flourishes celebrating our city's age and those very good decades in the middle of the twenty-first century. My friend's preferred table was beside the long window overlooking Mill Street, but if strangers happened to occupy that prime real estate, he was capable of happily sitting elsewhere. He also had a favorite chair—old-fashioned living leather wrapped around smart iron—yet he wouldn't think of asking anybody to surrender it, certainly not just to suit his delicate bottom.

And comfort was very important to Old Hogan: The man's health was decidedly frail. Details were kept private, but I heard rumors about implants failing early and stem cells stubbornly refusing to act young again. Sometimes his weary stride would falter, a sneer and long wince providing stark evidence that the most recent pain suppressants weren't doing their work. Yet Hogan remained a brave, enduring presence, never complaining, never harkening for better days. A truly vain man would have patched the broken vessels that dotted the brown-speckled skin, and the sagging skin would have been tightened, and his stained teeth would have been pulled for a new crop, while fresh hair would have been grown, or at least that final white fringe behind the enormous pink ears would have been removed, leaving his scalp pleasantly, agelessly slick. But there was no bringing back the shaggy-haired boy in the old photographs, and Hogan seemed comfortable with his elder-states-

man status. "So long as I have a pulse," he mentioned on occasion, "I won't waste good money on cosmetic niceties."

And like every survivor from his generation, Hogan had money. Save your dollars long enough, and wealth is inevitable—a lesson that I have tried to apply to my brief life. But my friend was more than just casually rich. Lucrative holdings in the booming biogenics industry were the beginning. His precise worth remained a matter of conjecture, even among other Olds. Yet nothing about the man looked especially prosperous. I have visited his home, and it defined him as well as anything: A simple, unpretentious structure comfortable in its historic value, sheltering a soul that had always lived in our little city. The Shop served as a second residence—a public living room for a private, lifelong bachelor. But only his best friends knew that Hogan owned the Shop. The original owner had emigrated to one of the orbital cities, and to ensure that his watering hole remained open, our friend quietly purchased both the business and the entire city block. Those in the know were sworn to secrecy. Even the hired managers believed they were working for a bloodless corporation, and that grinning old gent who visited every morning was just their most regular regular.

Hogan always made time to speak to friends. We were a varied and sometimes interesting group, and I'd like to believe that I was one of his favorites, as loyal as anybody. Though it has to be said that there were dozens and perhaps hundreds of patrons who regularly crossed paths with him during his happy, mostly changeless days. My routine brought me down to the Shop on Sunday mornings. I rarely sat beside Hogan, what with the crush of devoted bodies, and sometimes there wasn't even room at the same table. But I felt confident that my friend would be there the next Sunday, and the Sunday after that, and should life and my dreams ever take me anywhere else in the universe—an unlikely future, I assumed—then the ancient fellow would still enter his Shop each morning, purchasing a sweet coffee and small muffin, or maybe if he was in adventurous mood, a new flavor of tea and odd imported fruit.

The Old tend to repeat their stories. Yet I tried listening to Hogan's anecdotes with a fresh, gracious attitude, pretending that one of these days there would be a new detail or flourish that would add to the tale's weight.

One of his linchpins involved his mother and a family vacation to Rome. This was in the third decade of the twenty-first century, when the Change was just beginning to show promise. In that ancient city, on her seventy-fifth birthday, Mrs. Hogan received several forgotten gifts, and from her son, a gold necklace strung through a jeweled half-heart. In a kidding manner, Hogan promised to buy the other half of the heart when she turned one hundred and fifty. He expected everybody to laugh at his graveyard humor, but the silence was ringing. What's more, the old lady fully intended to cheat death for quite a while longer. Her response was a cold stare at her mouthy boy. Then with a sorrowful shake of the head, she announced, "Oh, Thomas. Darling. You won't make it that long, darling."

As it happened, his mother lived to be a respectable 107. Her health was robust at the end. A long plunge down a flight of stairs killed her. Ages after the funeral, the bruised son liked to tease his lost parent. "She was so sad, warning me that I wouldn't outlive her," he would mention with his raspy little voice. "But a mother's love carries only so far. She always considered me to be her weak child, while her daughters were the tough ones. My three sisters were her favorites. But on that day when Mom would have turned 150, only one sister remained. And to honor the occasion, she and I flew back to Rome and found a retired jeweler who might have been associated with those who made the first necklace. He created the other half-heart and fused it to the necklace in an artful fashion, and this is it. I carry it everywhere."

Hogan had a long hand, bony and always trembling. Holding the stones and gold for everybody to see, he would take a deep breath and then add, "That was my last

journey anywhere. Rome was. Since climbing off the train at our old railroad station, I haven't left the borders of our community. Which means that I haven't been anywhere else in . . ."

Then he would hesitate, letting each member of his audience wrestle with numbers that he always knew by heart.

If you were one of his true friends, you understood that Thomas Hogan wasn't waiting for answers, much less brave guesses. He wanted the silence, building up a bit of drama before reminding everybody, "That was four hundred and nineteen years ago."

And then, "Four hundred and twenty years ago."

And, "Four hundred and twenty-one years ago."

And that's how the ritual continued until he looked straight into my patient black eyes, saying, "Four hundred and sixty-seven years. Can you imagine it, my friend?"

Almost every Sunday, I would sit close to this undiluted human—a pattern of my choosing that held steady for nearly fifty years. Which was most of my little life, and why did that fact depress me so?

I'm a diluted human as well as a diluted gibbon, with slivers of once popular breed stock including Labrador retrievers and red pandas, De Brazza's monkeys and calico cats, with an average assortment of genes borrowed from less mammalian branches of the pre-Change Tree of Life. But mostly I am post-Change—a compilation creature honoring the genius of corporations and special individuals, my flesh infused with synthetic genes and novel amino acids, my eternal body humming along under the close watch of ultraefficient enzymes and tiny mechanical doctors that defend my borders against attacks as well as subtle insults. I tell myself that I'm smart and a little bit wise and open to suggestions but stubborn in the face of idiocy. I vote in every election. I can tell a respectable joke. When I consider my future, I imagine a single spoiled child under my arm. Money is one concern, but on a modest income, I've managed to acquire a respectable portfolio. And I'd like to believe that I'm handsome. (Who doesn't?) But in the greenish-brown eyes of a true human, I am a tiny fellow, no bigger than a three-year-old boy, and a small boy at that.

Hogan was a giant compared to me and to most of us, which certainly helped his status. Life always admires the biggest creatures. And he had his age and that considerable wealth to admire. But we loved him most because he was pleasant and approachable and simple of taste. He preferred clothes that wouldn't wear out for decades. He had exactly two pairs of shoes, black and identical. Even his favorite modes of travel were modest: His morphing car didn't know any modern shapes, while his high-wheel bike looked like a museum exhibit. But the man took pride in maintaining his possessions. Patching the bike's carbon frame was no chore; it was a glorious event. Replacing the gyroscopes was a rite of spring. One morning, he asked us to file outside with him and admire what he just done to his treasured companion, and while I couldn't claim to understand the cranky gearing or primitive brakes, I could marvel in the shine of the machine and the elegance of its design and how obediently it rolled after its owner when Hogan put on his helmet, announcing that it was time to leave.

There were several dozen of us that morning—good friends and long-term acquaintances, plus a few souls drifting at the margins. Final words were offered, polite and reflexive. Then Hogan climbed onto the tall saddle and rode off. The street was never busy on Sundays. The late morning weather couldn't have been more pleasant. After passing out of view, my ancient friend fell in beside an automated delivery wagon. And just then, two mechanical systems in the wagon malfunctioned, and the autopilot—just days into its new career—did what it thought best. It veered sharply away from the human balancing on that odd contraption. But the wagon's nose clipped an oak tree, and the pilot made one enormous miscalculation, the wag-

on leaping back across the street and killing my good friend before he was aware of the unfolding disaster.

That was a memorable day.

What struck me was the arbitrary nature of the disaster, and even more so, the extraordinary waste that comes when five centuries of uninterrupted life ended for no reason. Hogan's body was crushed. Yet I went about my day entirely unaware, and then the first word about the disaster arrived in the form of a good friend beginning with the question, "Did you hear?"

What she wanted to know was, "Do I have exclusive rights to break the very sorry news to him?"

"Hear what?" I asked, my ignorance plain.

Then she told me everything in a single breath, accurately recounting the final five seconds of the old man's life.

I claimed not to believe her, even though I did. The holo phantom promised that it was true, and then after a last, "Sorry," she abandoned me to my rising grief. I thought about my loss. Not Hogan's misfortune, but mine. I tried to measure my pain but discovered that I had no scale up to the task. Too late, I tried to think of people who wouldn't have heard the news but would be injured in the same general way I was. Then when I realized everybody knew as much or more than me, I closed off every communication avenue with the world, and I sat in darkness, waiting to cry. But no tears arrived. And that's when finally, to my considerable disappointment, I understood that I wasn't as close to this man as I had imagined.

I was blue, yes, but it proved to be a bearable, almost pleasant species of sorry. One old human had been killed, but sitting at the public service, listening to praising words from strangers and friends, it was easy to let my little aches dissolve into the greater, more profound miseries of a community that had lost one of its revered elders. Without question, the man had lived a good life. He had been comfortable enough and happy in his routines, and what he had asked from his world was acceptance and patience and little else. He would be missed. He would not be forgotten. We were lucky to know him. So on, and so on, and so on . . .

The only conspicuous absence was the living sister. She long ago moved off-world but didn't send even a representative holo. Yet that made sense, since according to her brother, they hadn't spoken in centuries—early animosities and a mother's preferences having successfully poisoned the siblings' relationship.

Several Shop patrons rose to share Hogan tales.

But the story I wanted to hear wasn't mentioned, even in passing. Which seemed wrong to me. Then when the overseeing minister—a pony-sized centaur wearing elegant purple robes and substantial human breasts—looked across the multitude, asking if anyone else would like to come forward and talk, I wanted this chance but did nothing. I didn't even breathe. And then she continued with the service, quoting the Holy Writs from memory, reminding us that Life was God, and God continued in Its increasingly myriad forms, and in those ways that chemistry and genetics are beautiful, our friend would always be with us, and we would be joined to him.

Offering excuses, I avoided the gala luncheon that followed.

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My life soon found its old rhythms.

But then the following Sunday arrived, and for no reason better than habit, I decided to return to the Shop. Pushing through the diamond door, I found several dozen friends sitting at the best table, everybody shoved together and most eyes gazing out over the sidewalk. Hogan's favorite chair was present but empty. I sat where I could, my back to the window. I didn't see the apparition's arrival. I was talking to a birdish lady and her large daughter, trying to decide if either one might entertain romantic interests in a morose entity like me. And that was when the front door opened and swung shut and suddenly nobody was speaking and everybody but me was staring at the newcomer. I had lost my place in whatever little story I was trying to tell. I felt confused and self-absorbed, and then the empty chair was filled and I looked up to see Hogan staring at me, smiling in that warm watchful style that couldn't help but make a creature feel important.

"Did I mention?" he began. "I always had a back-up plan in place."

My friend was a rich man, of course. But until that odd, unwelcome moment, I didn't appreciate the reach of true money.

My friend was dead, still and for always. What sat with us on the that Sunday and returned to the Shop every day afterwards was a machine—a sophisticated assemblage with token organic parts and an almost complete memory distilled from a brain sucked out of a shattered helmet. But the new Hogan insisted on pretending that nothing had changed. He was the same, in essence. His stories were the same. And even when his audience shrank to the odd souls and a few wary faces, he continued to arrive and hold court and then leave again, riding his rebuilt bicycle as often as before, never betraying even a shred of well-earned fear.

At this point, I will mention that I have no problem with machines, including devices that mimic the voice and actions of a deceased human. But I had a terrible time with this entity, since there was no warning about its existence—and if Hogan had been a true friend, wouldn't he have given us that?

I refused to drink or eat anything at the Shop again.

For most of a year, my pledge was held. Updates came my way through various sources, allowing me to feel both informed and self-righteous. But then one day something awful dropped into my head—an idea that took my breath away when it showed itself to me—and after a sleepless night of trying to drown the notion, and failing, I picked myself up and gathered what resources I could and rode the streetcar to the train station, purchasing a single ticket on the next supersonic express, along with reserving a cab that would wait only for me.

Earlier than normal, I entered the Shop.

The new Hogan was sitting at his favorite table. I wasn't alone in my intolerance, I should mention. Only a few entities were gathered about, and I doubt if I knew any of their names. But when the robot saw me, he lifted a plastic limb and smiled, and a voice that was a little too clear to sound authentic spoke my name with confident pleasure.

I bought nothing, that self-imposed taboo still in place.

But I sat across from him and let him see a small smile, and the robot asked about my life of late, and I shrugged without commitment, and we sat for a long while before I asked if she was still alive.

"Is who alive?" he inquired, curious enough to lean toward me.

"Your sister," I said.

He didn't hesitate. Nodding, he said, "Alive and quite well, as I understand it."

"Where does she live now? Remind me."

"Ganymede, I believe."

I knew that already. But I nodded and acted interested, and eventually one of the new friends rose to the bait.

"You have a sister, Thomas?"

He said, "Yes."

"Out by Jupiter?"

Then I interrupted, saying, "Tell them. About the heart, I mean."

"What heart?" several voices pressed.

So he told the story again, flawlessly and without hesitation. It might have been the true Hogan relating events from that ancient, nearly mythical time. But even as I listened, I heard little. Just the cadence of the words and the usual silences, and when he paused near the end, his audience of newcomers ignorantly attempted to answer the question of time passing. Forty hundred and sixty-eight years had passed, and everybody did the math, and he repeated the number with supreme authority in his voice, his too-steady hand reaching out to offer us a look at the famous heart necklace.

The hand opened.

A moment later, the robot looked down at the empty palm.

And I was up and running, through the door with my prize clenched in my hand and nobody yet thinking about chasing down the thief.

Gold has always been scarce, but its value for jewelry was lost ages ago. And diamonds better than these are grown by the ton inside orbital factories. What I had stolen was a trinket, an example of outdated craftsmanship that collectors and legal authorities would never care about. Its physical worth was minimal, better than the average mug of Texan coffee, maybe. But the sentimental value was enormous: One of Hogan's essential props, a symbol of victory and endurance, and every time he stared into his empty hand, he would recall the awful and wrenching moment of its loss.

The cab accelerated, diving into the tunnel leading inside the earth, passing through demon doors and the air growing thin, while matching velocities with the next southbound train.

Disembodied voices called to me through assorted ethers. Hogan was first, followed by a chorus of increasingly important friends. Everyone begged for my intentions while asking for my terms. I responded to no one, and when the noise got too bothersome, I cancelled every one of my public links. Faced with silence, the robot would now waste many minutes and perhaps whole hours searching the city that he knew almost as well as his own body. But his pursuit would be delayed at every turn: Hogan had died, after all, and even if this were his legal stand-in, the police wouldn't have much interest in recovering a bauble lost by what in essence was a nonvaporous ghost.

I had a plan—a direction and a clear goal. One of my Shop friends was a Gypsy, which isn't to say that he had any specific ties to that vanished order. The name was a label and his show of pride for a lifestyle and happily borderline attitude toward property and what was right. In better days, we would sit together as part of Hogan's entourage, and the Gypsy entertained us with wonderful stories about odd citizens that he had met and historical oddities that were usually found to be true. He was the authority that informed me that humans used to own humans, just as all life remains subject to whims of the master species. Occasionally the Gypsy would vanish for a few months and then return, never warning us of his travels in advance but always towing home vivid descriptions of lives being enjoyed off-world today. He was a brash and confident personality, and once when it was just the two of us chatting, he taught me the easiest means by which a smart and determined Gypsy could travel anywhere, moving quickly, and leaving almost no trace of his passage.

Until that morning, I didn't realize how thoroughly I had embraced those simple guideposts to a life on the run.

My cab docked with the subterranean train, and for a small "tip," I convinced the autopilot to forget its only passenger.

Safely onboard, I took money from my one-use wallet, paying for the cheapest available quarters—on the train's tail, where the smart cargo huddled—and after making conversation with some null-units and happyhearts, I exchanged quarters with the most agreeable of my new friends. If a summons were issued against me, and if the train's security came for me, at least I would enjoy a few moments of chaos when they knocked on the wrong door, and perhaps I would find my chance to escape.

But nobody came that day.

Before evening, I was sitting in a restaurant in Quito, watching the sun set on the living green carpet that covered the Pacific. Space beckoned. That destination wasn't new; I had left the earth half a dozen times in my life, in fact. But the terms of this journey were so different, larger and more important than my previous attempts at distraction. And I knew that my pursuer, by one route or several, would eventually pick me out of the trillions of citizens—a chilled and rigid fact that lent those moments of sloth, eating tapioca and baked termite balls, what seemed like a delicious, intoxicating nervousness.

A collar was about to be thrown around my neck.

Ten burly officers were preparing to wrestle me to the ground.

Or a simple dart of electrical sleep would prick my neck, causing me to collapse into a helpless, well-deserved coma.

I felt ready, yet none of these fantasies came true.

Unnoticed by the world, I rose and left my tip and walked to the Quito skyhook. Regulations didn't allow false names, but there are no less than twenty thousand governments and half a million agencies on the earth, each serving and defending some tiny fraction of entire Shared-Species biosphere. By the most popular methods, I requested passage to the geosynchronous Wheel, and I watched the silver bubble that should have carried me rise past the tropical clouds and airborne forests. Then I walked to the train station and replayed my previous methods, reserving a back-berth on the next train to the Kilimanjaro skyhook. I didn't take that either. Instead, I returned upstairs and filled out the forms necessary to prove that I was a minister in a splinter faith popular before the Change. I was a Baptist, at least for the moment, and despite a paucity of believers, there were scattered offices and a determined bureaucracy that happily recorded my existence. When requests came for news about my whereabouts, my brothers would tem-

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porarily plead ignorance, and later, religious privacy. I remained faithful to Jesus all the way to the Wheel and that moment when I was to board the transport to Luna. But the transport left without me, too. And because I thought I was clever, I turned around and bought passage on a large liner embarking for Mars in the next ninety seconds.

Unfortunately, my launch was delayed.

Secured to my seat inside my tiny, tiny cabin, I wondered if the equipment failure was genuine. Perhaps it was, though I had to wonder what kinds of power Hogan's money would allow him, should he ever find the focus and need to do something that was genuinely important.

The necklace was a trinket, warm and damp in my hand.

Suddenly my cabin door opened, and in kicked the pursuer that I expected most. He smiled, and I smiled in turn. He didn't bother looking at the fused heart or gold chain, but I understood that he knew exactly where they were. Then very quietly, almost in a whisper, he mentioned, "This means nothing. If you give it back now."

"I agree. It means nothing, if I relinquish it."

"He isn't happy," the Gypsy warned. "In fact, I've never seen this creature as angry or irrational as he is right now."

"True words," I allowed. "But you haven't known this creature for more than a day, have you?"

My friend's narrow faced focused on the air between us.

"Hogan died," I reminded him.

"Legally, he didn't. All the forms were filled out before the accident." The Gypsy drifted closer, perhaps thinking of snatching away the prize. "You shouldn't have involved Jesus. That was a giveaway."

I shrugged, happy to be beaten at this game by a superior.

Finally, the creature asked, "Exactly what were you trying to accomplish with this stunt anyway?"

"You don't know?"

He said, "No."

I told him.

The Gypsy didn't believe me. Could it be that simple?

"It's anything but simple," I admitted. "And I'm surprised that I got this far, in fact. But at least I anticipated that he'd send you after me. As a favor, but paying for your expenses and your time."

"Of course," the Gypsy allowed.

We didn't talk for a moment.

"Isn't my ship about to leave?" I inquired.

"Not until I give the word," he admitted. Then he winked, adding, "Hogan, or whatever he is . . . he has resources beyond what most of us would ever have guessed possible."

I waited.

"This is crazy," my friend admitted.

"Then take the necklace," I advised.

He was tempted, yes. Each of his four little hands practiced the reach and the grab. But then he shook his head one last time, asking, "Which one of us do you think he'll send next?"

I offered names.

He offered other names.

We sat a long while, thinking hard.

Then the Gypsy said, "We're getting off the Mars liner. At least for now."

"And?"

"I think we can swing a couple of those others. When they come for you, I mean."

"That was my intention from the start," I said. Though it really wasn't, and this

entire business had the feeling of desperate inspiration married to a fabulous amount of luck.

He offered more names, each one a friend of Hogan's, and by the way, wealthy.

I nodded agreeably.

"I'll contact them," he promised. "Tell them enough, but just that."

Feeling myself relaxing for the first time, understanding that I might even enjoy this game in time, I asked, "And then what?"

"I don't know what." My friend relaxed too. "Have you ever had the hunger to fly one of those really big solar sails?"

The voyage lasted eighteen years and five months, and there were three increasingly larger and more capable vessels pressed into service, and during those years our growing gathering of friends and co-conspirators visited nearly fifty worlds and asteroids and moons. Our intention was a long and interesting chase. Since the robot couldn't break its own heart from fury, we felt free to tease him from a great distance. Sometimes a new agent or hired authority would be sent to throw a net over us, or at least try to steal the coveted necklace. But we matched every effort with our cunning, and sometimes we threw in our own counterblows, including the fake turncoat who finally managed to convince Hogan to abandon the familiar and chase us for himself, flying out to the edge of the solar system.

But we weren't anywhere near Neptune, which he discovered to his horror. Our destination had always been Ganymede, and every flourish and side trip were attempts to lend drama to what was becoming a rather enormous story—something we could tell for generations to come.

The estranged sister lived on the plastic continent known as Tub-green-good, and thirty kilometers from her front door was a hotel intended for long-term guests, plus a little business that sold a beverage that bore passing resemblance to coffee. The giant creatures native to this one little corner of the moon proved amiable about earthy types. We shared views with them, told tales and lies and jokes, and every day we waited for our last friend to arrive.

Eight months, the time it takes a personal ship to plunge from Triton to the table that we occupied each morning.

We didn't once involve the sister. I suspect that she was as fixed in her life as her brother was, and even if she learned of our presence, the stakes weren't worth breaking her little rituals and rhythms.

On what would have been Sunday at home, we were sitting about, steaming cups resting on a table made from a trillion trillion carefully stacked diatom shells. And then the Gypsy announced, "I think I see somebody," and we looked too. And then because this would be best, we turned away from the front door. We continued with whatever chains of conversation had started, pretending nothing was out of the norm.

The front door opened, and it closed.

Not one figure, but two, walked to the edge of our little party.

The necklace lay in the middle of the table, in plain view. But Hogan—the new and newly changed entity—barely looked at it. He took one seat while his female companion silently claimed another, and I looked at the head of fresh hair, living or otherwise, and the bright new teeth that were smiling, and I smiled back at him.

The girl was more gibbon than human and beautiful in the ways that gibbons can be. With a quick soft voice, she said, "That's pretty. That necklace. Who belongs to it, does anybody know?"

Hogan sat back in his chair.

Then as he gave the rest of us a look of grave appraisal, he said, "All right, you monsters. Fine. I've got some new stories to tell. . . !" ○

BLUE

Derek Zumsteg

Although Derek Zumsteg's second story for *Asimov's* probably won't do much for your appetite, it certainly should whet your interest in hard science fiction, black holes, and spaceships.

"Black holes are supposed to be black," Sigurd told the void of unwinking stars, watching the indistinct Sinca-177. He shook his head and stood, feet latched to the ship keeping him in place. Every breath rebounded paprika, cumin, and oregano back to him. "I'm going to die in a blue hole."

"Sigurd, are you going to come back in or do I need to come out and get you?"

Sigurd ground his teeth and held his arm out in front of him, lining the thumb up with Sinca. The slightest blue crept around the edge of the white suit fabric. "Like a flambé," he said.

"It's not like a flambé," Rivka said, in her professor's voice. "Come inside, Sigurd, you're taking rads and I don't like the look of your vitals."

Sigurd patted the replacement sensor pod softly, freed his feet, and swung over the side of the shield into its protective umbra. The support structure was insubstantial, wrapping around the modules like vines, unnervingly thin, long smooth curves of dark metals drawn out and assembled in zero gravity. And within, the all-hexagonal cross-sectioned ship components, ugly blocks welded end-on to the graceful main spindle. He trudged past the shattered husk of Hab 1 and then intact Hab 2, keeping his eyes towards the massive ion engine's cowling forming the stern.

He didn't look at Hab 1 as he passed.

"Did the shielding look good?" Rivka asked.

Sigurd took his time walking, shortening the tether as he moved.

"You're busy. You can tell me when you get back."

At the airlock, Sigurd clipped to an interior hold, pulled himself into the welcoming orange glow, and cycled the door so he could continue inside.

Sigurd pulled off his helmet to take deep breaths of the familiar, flat ship air in the cavernous locker room. It was designed so two could prep for walks, wrangling hard suits, EVA rigs, and tools in and out of lockers in zero-g without expensive and damaging collisions.

Rivka weaved into the locker room, twisting to catch the holds inside the door with a snake-like ease, her long brown hair a trailing cone bobbing in her wake. "Sinca's beautiful, isn't it?" Her smile came thin, under wary brown eyes.

Sigurd opened his locker and stored his helmet. Rivka's smell reached him, the detergent used on her stock science overalls.

"Wasn't worth it," Sigurd muttered.

"Do you want help with the suit?"

"No," Sigurd said.

Sigurd unhitched and stored his right glove, then his left.

"I don't want to be a nag," Rivka said, and hesitated, "but I should check your suit before you go out." Sigurd stopped to look at her for a second, then began to undo the torso latches. "Even if you're not talking to me."

Sigurd pulled the torso off. His silver underlayer with snazzy national trim colors clung to him heavy and dark with sweat. Rivka kept her eyes on his face, and Sigurd blushed.

"Don't you have a tenure committee you should be blowing or something, Professor?" Sigurd asked, looking down at the suit's waist.

"We need to talk and it's time for dinner. What do you want tonight?"

"What do I want? I want the cheese and veggie omelet."

"Sorry." Rivka smiled, balled, and kicked herself into the main corridor to alight with a gentle thump of sock to bamboo. "Chicken-fried steak it is." She pushed off again.

"No! Rivka, no!" Sigurd yelled at the departing ankle. Sigurd sighed. He undid the boot fasteners and reached up to pull his feet out one at a time. They came out in a cloud of steam that smelled of rank astronaut. "Glad she isn't here for this."

Sigurd dressed in his science overalls and followed the ship-spine passage. A fine bamboo mat flooring covered all the walls, lit softly from beneath, cool beneath bare feet. Sigurd, through long practice, could consistently get half the length of the ship without touching anything, moving in silence, held in light, serene.

Past Rivka's Science One, empty Science Two, and Greenhouse One and Three, neither actually greenhouses, as Sigurd argued at great length with Burne, the ship's medical officer.

He reached out to grasp a hold and brake to a stop outside Galley and Social. Sigurd smelled the gravy and breading as he caught a handhold and brought himself to the opposite flooring. He glared into the kitchen at Rivka, smiling back, next to a humming oven.

"I smell breading and Z-grade meat," Sigurd said. "I said no chicken-fried steak."

"I must not have heard, sorry," Rivka said, expression not changing.

The galley cabinets were faced with a light wood, the trim and accents in a deep red, warm, appetite-enhancing to offset the food served there. The kitchen ring laid out its major fixtures across each other in a loop—two sets of cooking stations with appliances, two fold-out tables, each with seating for four. Past the hub of the kitchen, the meeting room, white and blue, benches aligned on a plane, for presentations, meetings, pleasant discussions between colleagues.

Rivka looked at him with concern as he passed inside, her hair forming a trailing parabola as her head turned; then it moved past the knot, colliding, collecting, splaying out again.

He took his place at the table nearest Rivka. She drew a breath and stood a little straighter, as if preparing for the opening of a lecture.

"Sigurd, I'm sorry I bugged you while you were out, but I wasn't sure that you knew that we're seeing a lot more radiation at this distance than we expected."

"Yeah, it's true, I was just looking at your mission spec and noticed that."

"That mission spec was peer reviewed, Sigurd," Rivka said, coming down on his name. "All those people didn't fund this without reviewing the spec and agreeing with me."

"I bet they did. I bet they said 'whether she's wrong or right, it'll be years before we have to listen to her again. If we're really lucky she'll be killed. Quick, find a crew of suckers and get her out of here!'"

Rivka's mouth kept open, her head came forward, she blinked, and the bell chimed. She huffed and pulled the trays out one by one with a pair of tongs.

"Mmm, mmm, does that smell good." She smiled, mouth only, as she set the first tray in front of Sigurd, the magnetic surface snapping it into place, then her own. She sat opposite him, swinging her body around hip-first, perfectly into the seat, her long hair forming a lazy curlicue behind her. She smirked, eyes sparking, and peeled

back the cover on her tray, releasing steam and transfats to dissipate in all directions. She waved at it with her free hand and poked at the spongy slab with her fork. "This thing reminds me of when I had to do roofing work one summer," she said, and tore off a bit of the gravy-laden meat.

"Please tell me the story of the one summer you had a job, you blue collar hero," Sigurd said.

"It was disaster relief." Rivka chewed, pointed at the monitor showing a Sinca tracking feed. "You don't think that's pretty?"

"It shouldn't be anything."

"A photosphere on a black hole, Sigurd. It's astonishing. At least one fundamental assumption we made about how black holes live and die is wrong."

"Or that they're black."

"Eat that before it cools." Rivka kept chewing. "As long as we've got a photosphere, why not blue?" She swallowed. "Is it me or has the chicken fried steak gotten worse over the years?"

Sigurd took his first bite. "It's not you. You know what I miss?"

"Cheese and veggie omelets."

Sigurd nodded, worked his molars on a hunk of meat, sipped at a water bulb, and watched the feed with her. "We should be redshifting that thing severely. For it to be pushing out that much energy at . . . I don't get it."

"Shower and get some sleep. You'll feel better." Rivka smiled, nodded, and cradled her tray as she one-armed into the spindle.

Sigurd took a big bite of the orange-grey meat in lumpy blue-gray sauce. "No I won't," he said.

Sigurd worked in Science 2 with ship course projections, radiation and survivability overlays, and a deepening frown, reclining in the number two chair, his science overalls the only entirely white object in the productivity-enhancing red. No one had liked working in Science 2, small and designed for analysis over experimentation, where to maximize the workspace of each station the designers had built the desk space head to toe, which meant that whoever arrived third got to work lying down with a set of feet defining the left and right of their peripheral vision.

"It's your turn to make lunch," Rivka's head said. She brought herself to sit in the doorframe, cross-legged, hooking an ankle into a safety catch for stability. A long and intricately braided ponytail snaked into the room on her inertia, carrying the smell of strawberries from the door to Sigurd at the opposite end.

"How do you smell good? My choice is between BO and disinfectant."

"What are you looking at?"

Sigurd sighed slowly, nose-only, taking his time looking over to her. "The radiation, Rivka, I'm looking at the massive amount of radiation we're taking."

Rivka nodded. "Hmmm. Yeah. I'd be concerned about that if I wasn't worried we'd be blown up. Or crushed horribly. But I'm sure you'll get to that at your own pace." She looked at her watch. "You've got a physics degree, it should only be another hour before that dawns on you, right?"

"Blown up?" Sigurd said. "Or crushed? Or?"

"We could be blown up and crushed," Rivka said. "Technically, yes, you're right." She pursed her lips. "Good catch."

"I don't understand."

"I thought—" Rivka paused, wide-eyed, lashes fluttering, one corner of her mouth twitching upwards. "Oh, I'm sorry, I remember now, your degree was in systems engineering. Where was it? Southeastern North Virginia Technical Junior Community College for Alternative Education?"

"Caltech," Sigurd said softly, eyes closed. "You know it was Caltech."

"Oh, don't be a baby. Let's eat and I promise to stop making fun of your cut-rate education."

She unscissored her legs and kicked from the doorway out of the lab, hair forming a spiral in a moment of seeming hesitation, leaving Sigurd in the lab with a spectrograph of a black hole that refused to be black and the scent of berries.

Sigurd turned over his container to read the embossed label on the underside. "There's no way this contains either chicken or dumplings. There's no way."

"I got ham slices in brine," Rivka said.

Sigurd blinked. "I'll shut up now."

"Did you put this on top so I'd grab it?"

"Me?" Spoon pointed to his own chest. "Sneaking around, rearranging meals so you'll get ham slices in brine?"

"That's not a denial." She took out her ham slices in brine, carefully set it down on a table, and cartwheeled to a seat, smirking.

"Aren't you graceful." Sigurd jammed his spoon into the glop so he could gesture with a free hand. "We need to deal with what we know, and that's the radiation. We back way, way off, take our resistance doses, go for the long orbit as fast as we can."

"If we want to get away alive, we need to go in a lot closer and a lot faster," Rivka said. "We need to be crushing ourselves to get out of here."

Sigurd stopped eating to sit up straight in his restraint, rolling his shoulders against the seat back. "How familiar are you with the ion engine they built to keep you from annoying the rest of humanity?" he asked.

"I . . ." Rivka paused, took a bite and chewed thoughtfully. "I understand the physics."

Sigurd nodded vigorously twice. "The practice is going to be important here. We throw stuff out the back at like two hundred clicks a second, that's huge, but we're huge. A chemical launch vehicle, it's going to put the payload through like . . . three Gs." Three signed with fingers, fork precariously held with thumb and pinky. "That's a couple million Newtons of force. Newton's pretty small. The second-stage rocket, that's a couple thousand Newtons of force. Are you with me?"

"Yes, yes, yes."

"You don't see where I'm going."

"No," Rivka sighed, eyes rolling, "I do not see where you're going."

Sigurd scratched his chin with the fork tines.

"Don't do that," Rivka said.

"You were probably thinking that we'd be doing a series of ten-G burns, right, taking a couple hours off to sleep, exercise, eat, then back to the burn."

"It seems reasonable," Rivka said, her voice tentative.

"This, this is why it's good we're both here. Complementary knowledge. Okay, so—we could put maybe two Gs behind two of us." He paused. "Just you," pointing, "me," self-point, "strapped to the engine."

Rivka blinked. "What's the use?"

"No, no, it's perfect for us, amazingly efficient, almost no reaction mass requirements, you do need power, obviously, but we've got ridiculous power, and you get great control over the thrust. . . ."

"What do we do?"

"Nothing," Sigurd said. "It won't matter. So we do nothing."

"No, no, Sigurd, no. I don't know propulsion but acceleration equals force over mass. We reduce mass. We throw out a lab, uh, the extra bike, supplies, anything that'll help. Any improvement in our chances is worth taking."

Sigurd started to speak, stopped, took a deep breath. "If there's anything I've learned from this mission, it would be that that—that is so much bullshit. What's wrong with keeping our distance? You don't think we're going to get enough data for your career to resume its ascent when we return?"

Rivka's face tightened, and her pigtails twitched in annoyance, rippling out. "Fuck you," Rivka said, and raised her open tray as if to throw it.

"Don't waste food," Sigurd warned.

She threw it anyway, low at his hips, with a flash of a smile. Sigurd sighed, watching the ham slices in brine move from Rivka's hand to his uniform as if drawn directly on a string, and had another spoonful of his chicken and dumplings.

"I can't believe you did that. If my coveralls come out of the tumbler smelling like ham slices in brine. . . ."

"Sigurd, your jumper smelled like ham slices in brine a long, long time ago." Rivka smiled as it hit, misshapen globs stinking of salt striking all over Sigurd. She waved, made a quick flashing obscene gesture, and struck out for the hallway with a stomp that shook the table.

Sigurd reached out with his spoon to dip his chicken and dumpling chunk in passing brine sauce. He popped it into his mouth, winced with disgust as the taste hit him, coughed it out, then rinsed with a bulb of water.

"So be it," Sigurd said.

When Sigurd heard Rivka on the stationary bike in Hab 2, the low thrum of the resistance fans and the steady beat of her workout music, he let himself into the pantry and took all the remaining beef ravioli rations to long-term lab storage, making several trips to get them all before she finished up.

In the long-term lab storage module, the airspace filled with bundled trays he'd brought down, Sigurd laughed softly and smiled. He opened a random locker marked on the manifest as unused. Cheese and veggie omelets filled it entirely; an interlocking stack that required both time and inspiration. He stared at it for a silent minute. With his hand trembling and heart racing, he reached for the next locker. Cheese and veggie omelet, perfectly stacked. Sigurd reached in to take one, holding its cold green-and-yellow foil packaging against his cheek.

"Oh cheese and veggies, I've missed you so much," he said.

"Are you going to cry?" Rivka asked. Sigurd turned too fast, still pressing tray to cheek, and saw her for a moment before rotating again and having to reach a hand out and stop himself. "Because if you do, I'll throw up so I'll need to go get the tension bag now."

Sigurd let off a little half-sob, putting his hands out in front of him, tray held gently in the palm of his left hand. "What did I do to deserve this?"

"I don't remember," Rivka said. "It's been so long."

Sigurd ate his cheese and veggie omelet happily in Science 2, sitting in a chair the wrong way, spine across base, legs crooked over the back, still able to use the belt to stay in. An empty green-and-yellow tray floated absently near a scope panel.

"Would you believe," he said with a smile that threatened to separate his jaw from his skull, "that a year, maybe two ago, this idea came to me—that you'd spaced the omelets, so I went through all the exterior camera footage looking for small reflective objects—"

"You're in a good mood."

"I have my omelets! They're better than I remembered!"

"I knew you'd look through the proximity logs. It's why I hid them."

"Well, I used your reading glasses for reaction mass because I was fairly sure you'd

be able to track them otherwise. So enlighten me, Rivka, why do I have very little time left to enjoy this rediscovered pleasure?"

"My models didn't have a photosphere at all. If we saw one, it should be extremely low on the spectrum, all infrared and lower, which is why we're even here."

Sigurd shrugged. "Models are biased. You build them on what you can observe, not what happens. Every time we get a probe back, we have to rebuild planetary accretion theory."

"Emitted particles are interacting far more than we've ever seen. We go from one quark-one anti-quark to many-many interactions."

"Your models in particular suck." Sigurd paused, held a hand up, took a bite with a thoughtful expression, chewed it while bobbing his head left and right, and swallowed. "Wouldn't we be seeing some really strange stuff if quantum interaction was going wrong?"

"Yes, and we're not seeing it. And we'd have seen some clues in supercollider experiments back home, so no to that."

"Too bad." Sigurd shrugged. He looked at one of the monitors showing an external feed of the unchanging star field. "I've always held out this hope that they've invented faster than light travel and we'll detect signals off some nearby M-class, and we make a left turn and rejoin civilization."

Rivka smiled. "Me too."

"I feel ever more bonded to you these last few days, Rivka."

"I'm not sure how I feel about that, Sigurd." She laughed, blushed, rubbed her eyes with one hand. "It's a higher dimensional black hole."

"Okay, it's a higher dimension black hole. I'm a systems engineer and I do have an astronomy degree even if it's from a public university, I'm good with math, so what now?"

"I spun up the engine but there are two faults I can't resolve and I need your help on a walk. There's a blown feeder sensor and no spares. We may need to machine one."

Sigurd's eyes narrowed and he studied Rivka, letting the silence settle. "We?"

"Yes, you, I'm sorry I don't have a metal whittling certification. Sinca's about four solar masses, it's boiling off Hawking Radiation at an enormous rate, so much energy it's glowing, Sigurd, glowing, quark on quark on quark on quark."

"All I wanted to do was go into space," he said.

"We need to do a walk and fire up the engines."

"You were crazy and brilliant and hated and followed, and I was a Ph.D student with an engineering background. I wanted to get into space so badly." He closed his eyes and laughed softly. "And now I'm going to die of radiation poisoning or I'm going to die plunging into a murderous black hole that refuses even to be black."

"We," Rivka said. "We're going to die."

Sigurd didn't seem to move for minutes, eyes closed, breathing slowly, and then he opened his eyes and unbuckled.

"Either way, we're going to need to spin up the engine," he said. "Do you know the sensor numbers?"

After showering and sleeping on a couch in a darkened command module, Sigurd woke to an exercise alert and grumbled his way to Health for a one-hour spinning session buckled down to a stationary bike bolted to one floor of the dodecahedron. Rivka passed by every ten minutes, glancing in but saying nothing. When Sigurd got off the stationary bicycle, breathing heavily, sweat droplets trailing off his skin as he moved to wobble in the module's venting, Rivka entered.

"Sigurd, could you wipe that down before you leave it?" she gestured at the bike

handles, wet and sticky with sweat off his palms. Sigurd stopped wiping his head with a towel and flapped it at her.

"Use the other one," Sigurd said.

"I don't want to use the other one, I want you to wipe the bike off."

Sigurd planted to stop his drift, shedding a small shower of sweat droplets to float, and reached across to wipe the seat and handlebars.

"I hope you're happy."

"No, but thank you anyway. While I've got you improving your hygiene, could you please stop taking such long showers when I'm waiting? It's really inconvenient for me."

"I need to take long showers sometimes," Sigurd said, flushing. "I'm under a lot of stress."

"I know why you're taking long showers. Don't think I don't."

"Why do you care? Shower later. It doesn't matter to you. We have the power, it's not like we have shift problems any more."

"It's gross. It's bad enough that I have to run a cycle when I get in there because I'm afraid you've left some . . . some deposit—"

"Have I ever—"

"It's not a matter of what you do, or whether I detect some gory residue of little Sigurd."

"I'm sorry my sexual functions creep you out, then. But you're going to have to live with it."

"If it makes me uncomfortable, I think you should stop."

"What am I supposed to do? Here I am, my blood sperm level probably 10 percent, and if we really hustle through the system we'll be heading back in a year and when we get home everyone will probably be dead or they'll have evolved past primitive DNA swapping or be into robots and I'll be turned into a sex robot—"

"Fine! Go! Shower! Do your thing! Knock yourself out!" Rivka waggled a free arm at him, pulling up against the harness to wave him off. "Have fun!"

"I will, thanks," Sigurd pulled to the doorway.

"It's a good thing you're sterile by now."

"Not funny," Sigurd said, moving away.

"I hate that after all this time, my mouth still waters when I smell bacon," Rivka said, entering the galley and inhaling deeply the rendered fat-thick air. "I know it's going to be rubbery and tasteless, but every time I smell it, I think 'yum, bacon!'"

Sigurd sat at the table eating, an unopened tray in the pocket across from him.

"Your lunch," Sigurd said, pointing with his fork at Rivka. "I drew bacon biscuits with brown sauce. And you're right, it's wretched."

"Is the engine up?"

"Yeah, I machined another feed sensor and swapped it in. We're A-okay to go and get killed. Too far, we're exposed and get microwaved if the radiation increases, or we get blown up. Too close, we're screwed, caught or we hit something in the accretion . . . or we're blown up. Or the radiation slows the ship, Sinca eats us and who knows what happens then?"

"The *Acheron*."

"Maybe they ran into a brown dwarf, stupid things are all over," Sigurd shrugged, arms out in resignation. "But okay, yeah, then we meet them on the other side and compare notes on what it's like to be compressed into a particle. I'll bet it's great."

Rivka laughed.

"Sit, sit, have some meatloaf with gravy."

Rivka huffed. "Why do you keep cooking the gravy and sauce ones?"

"You don't eat your veggies first? I want to get it over with."

Rivka worked through a neatly divided quarter of her food in silence.

"The lighter and faster we are, the better we maneuver," Rivka said.

"I don't know if it will make any difference. What if we get away and nothing happens, and we've tossed them overboard for nothing? Or—or what happens if we do, and still need another ninety kilos?"

"You're heavier," Rivka said. She gave him a level look with slightly raised eyebrows.

"I'm younger," Sigurd said.

"Even beyond strict mass considerations. Let's consider the science-per-kilo return."

"The science isn't going to matter much if we don't get out at all."

"I don't weigh ninety kilos anyway. How dare you." Rivka shook her head and clicked her tongue at Sigurd. "I'll make you a deal: if we need another sixty and that's the difference between weather the ship gets back or not, I'll do it." Rivka set her fork to click down on the table surface and leaned back, crossed her arms, and stared.

"Are you sure you'd be able to push all ninety kilos off the ship? That's a lot of impulse power, and I've seen you on the bike, you don't look like you have it in you."

"Oh shut up." She flicked a spoonful of food across the table and over his head.

"I'm not cleaning that."

"That's not what the org chart says."

"You spaced the org chart!"

Rivka shrugged. "It annoyed me. Sigurd, my potential sacrifice aside, you must agree on the weight question. We should be stripping everything."

"Everything?"

"Everything. I'd pull that stupid chunk of moon rock off the nose if I thought it would help."

"Volumetrically speaking, it's pretty light."

"It's more than sixty kilos, isn't it? Let's think about what we can pull off and come up with a list we can discuss."

Sigurd looked at her. "No spacewalks before then."

"Are you worried I'll throw myself off?"

"I'm worried you'll start cutting."

"Fine, no spacewalks," Rivka said. She looked at the half-dish remaining. "Meat-loaf and gravy. I know you shuffled this to the top."

Sigurd carefully set his fork down on the table, the contact a soft metal tap, and looked at her.

"Let's do the food. Sauced and gravied first."

"It's not going to make a difference."

"Do the math, each meal averages 450 grams, so each crew-year is what, 1 percent of our total ship mass? Half a percent? It's huge."

"We need to cut modules."

"No. No modules," Sigurd said, shaking his head. "We're going to haul them all back and you're going to return them to their families or their fucking centipede descendants or I'll even help you bury them if that's what it comes to. No. Never."

Rivka closed her eyes and took a long, slow breath.

"I'm going," Sigurd said, too loud. He got up, pulled his tray off the table, shoved it in the trash sealer, and looked back.

"Okay," Rivka said, swallowing. "I'm coming."

"Good riddance," Rivka said as they drifted, a dispersing cloud of slowly rotating

packets, silver foil glittering the blue of Sinca-177 back at them. "I hope some alien civilization doesn't come across these."

"I've never liked aliens," Sigurd said. "If they were so great they'd bail us out of this. Let them eat pork in barbeque sauce."

Rivka turned to face up-ship, looking towards the disk of shielding that blotted the view. "I'm going to go walk up and have a look at it," Rivka said.

"I'll go back inside and throwing out your 520 gram beef ravioli."

"Fine. How's your rad count?"

"It's been better," Sigurd said. "Why?"

"We emptied Supply 3 and 4," Rivka said. "I know you said no modules, but they're right there, we're never going to use them. . . ."

"I'll go pull the tool racks," Sigurd said. He unclipped the tether join and started to move back towards the airlock. "Do you know how to run power tools without killing us both?"

"I know I'm supposed to be the book knowledge," Rivka said, "but I was right there with you through the systems training. We spent years in those stupid tanks."

Sigurd turned backwards and kept walking while waving apologetically. "Right, right, you had that job doing roofing one summer. Sorry."

Rivka held up one gloved hand and tried to express a gesture at him.

The supply modules lined up after the ship's airlock midpoint, still ahead of the nuke and the engine, the same long, trailer-like hexagonal structure. They burned away with cutters off the ship's power supply, cutting and tearing slabs off in silence, letting carved pieces drift away from the ship.

"What do these stupid modules weigh?" Rivka asked.

"They're like twenty-three K each," Sigurd said.

"That's impressively light, but it's only what, a hundredth of a percent?"

"It's progress. If you want to throw out the scrubbers and the tanks, that section's ridiculously heavy."

"No."

"Or the nuke, that thing is way too heavy."

"Hab one," Rivka said.

"No."

"Sigurd—"

"No."

Rivka let up on the cutter, bringing a forearm to her helmet as if to wipe her forehead of sweat.

"I need a break," Rivka said. "I'm going to walk up and go take a look at Sinca."

"You're going to take a lot of rads if you move from behind the shield."

"I won't be long," Rivka said.

"I'll be here, desperately working to save our lives," Sigurd said.

Rivka secured the cutter to the hull, snapped her line to the ship guides, and walked along. When she got to the social room and began to shuffle across the shutters, Sigurd followed.

Rivka hand-overed the struts to the giant hunk of shielding moon rock and found a foothold by one of the field generators. She didn't look back as Sigurd came up the same way.

"Hey," he said, stepping over the edge and stopping. "I'm coming up on your left."

She turned suit and head, craning back to see him. He waved and started forward.

"Is there space here for two?" He looped his rope in around an emitter labeled NOT A STEP.

"I could have pushed you off," Sigurd said. "Sixty kilos."

"I'll go," Rivka said. "I'm ready."

"Rivka, if I was going to kill you, I'd have done it a long time ago."

"No," she said, her voice almost imperceptible. "You've held onto it, nursed it, no matter what I've done, and I'm sorry, Sigurd, they're with me all the time, but it's not my fault." She gulped. "I know you think it is, and you hate me, so here."

She folded forward and unclipped.

"Don't—" Sigurd started.

"Here." She stood up, rising on her toes just slightly, arms at her sides. "Here, Sigurd."

"No."

The inertia of her standing motion moved her off the shield rim. The stream of blue light reflecting off her helmet made her face invisible, and she said nothing. Sigurd's breath came louder, each inhale and exhale rougher and shorter, bacon in god damned brown sauce watering his eyes until he lunged across the meter gap between them, grabbing her leg awkwardly with one arm, trying to bring himself around, spinning them both. Sigurd snapped his tether onto her pack.

"Crap," he said, as he tangled. "Hold on."

They drifted the remainder of his tether, Sigurd wrapping his arms around her waist, hanging out diagonally, her tether twisted across his armpits as they came to a long, gentle stop.

"How did I manage that?" Sigurd asked, annoyed. He tugged them back toward the ship, slipped out of the bind, and reeled in to put them down on the gray mottled shield.

"Yeah, were you trying to strangle me?" Rivka's voice came higher, laughing.

"There's still time."

He locked his boot down and began to disconnect from her. Rivka clipped in and sat.

Sigurd looked at the blue photosphere of Sinca. "It seems a lot larger than it should," he said.

"That's a good observation," Rivka said, in the voice of the professor calling on a star pupil. "It's diffuse and radiant, so as we're closer, what you saw before appears brighter, and the increased visibility of accretion elements further out means the radial size is much larger as well."

"I would have thought that the accretion would fluoresce more in that much radiation, too, but it's not. It's hanging out, masking Sinca. It doesn't make sense."

"It's a blue hole, Sigurd, we could find a quark orchestra playing 'Peter and the Wolf' and I wouldn't be surprised. Still, I worry that if the accretion disk is sufficiently diffuse it's going to slow us down." She sighed. "And then we're dead."

"We're dead anyway. We've just been arguing about which way to go." Sigurd paused.

"Maybe." Rivka sat without speaking for a minute, the only sound for both of them the clicking of the radiation counter. "You really don't think it's beautiful?" she said.

"It scares me."

"What do you see?"

"Drowning," Sigurd said, and laid out on the shield disk, back against one of the sensors, slumping, defeated.

"Drowning?"

"When I was a kid, I went to Crater Lake on vacation with my parents. On the lake, there's a tree, a full-grown tree, that's been in the water forever, almost perfectly preserved, and when you look at it, you see it disappear into this perfect blue darkness, and you feel like you can't breathe, this weight comes down on your chest, you can't draw a breath, your heart starts going, you're shaking on the boat, leaning over staring into nothing. It's drowning. If I'm going to die, I don't want to suffocate

alone in the dark." Sigurd waited, breathed. "But I don't want to die of radiation poisoning or boredom from being stuck on some event horizon for eternity with you either."

"Thanks." Rivka waited, reached out, and set her hand on his forearm, barely touching it at all.

"I forget about them, sometimes," Sigurd said. "Sometimes I realize I haven't thought about them until I see the crew photo when I go to sleep. I'm lucky when we pull out one of Bruce's goddamn sauce picks. But every day, I'm after you. And every day, you're thinking of them."

Rivka didn't say anything and didn't move her hand.

"Let's go cut Hab 1," Sigurd said, and they walked back to the spindle of the ship in the shield's shadow.

Habitation One was designed to sleep three and currently entombed five, the trio caught in the module when something watermelon sized punched its way through during their sleep shift, all of them unable to manage to get to safety gear before passing out and asphyxiating.

"The last time I was here," Sigurd said, "I was running tetherless, hoping they'd managed to seal the puncture, that I could help."

"The last time I was out here," Rivka said, "I was putting Bruce and Stucky inside."

Bruce died of apparent radiation poisoning and took weeks to do it, while all four of them failed to find a cause.

Stucky did himself hours later, methodically working his way through the medical supplies until he hit LD100. Protocol was to bag and space the corpses. Sigurd refused: as long as they had an unusable module to stash them in, why not do them the favor? But it was Rivka that dressed them both in hardsuits and shoved them in with the others, unmoved since Hab-1's puncture.

Leaving two crew and food for seven.

"What's Hab 1 weigh?" Rivka asked.

"Forty thousand kilos easily," Sigurd answered. "We might be able to just burn around the locks and release it."

"No, we'll need the plumbing, too. You want to start, or me?"

"Hang on." Sigurd exhaled deeply, crackling across the helmet pickups, and then fell silent.

"We are in a hurry."

"I'm sorry, everyone, but Rivka says this is what you want."

"Sigurd."

"I know. Let me start over. I don't want to do this, but if we don't, we're not going to make it for sure, so please forgive me."

"I'm sorry too," Rivka said.

"They don't forgive you," Sigurd said, and reached across to switch on his cutter.

"That is uncalled for," Rivka said. "I'll break bolts three, four, and five. You work counter-clockwise."

"Fine, fine," Sigurd said. "I'll wait to cut the supply lines when I come around."

Habitation One, including its integral life support systems and personal effects, was the size of a single-wide trailer if they built single-wides with hexagonal cross-sections. Once Sigurd cut the supply lines, the escaping coolant, air, water, and effluent gave it a short boost away in a haze of crystals and particulate that glittered in the work floods.

"That's creepy," Sigurd said, watching it turn.

The outermost sliver of the module turned a brilliant sapphire blue coming out from the shielding's umbra.

"That is bright." Rivka said.

Flashing across more of two facings, a bright crooked crescent.

"We should get in," Sigurd said.

"Yeah, a lot of reflected rads here as it comes off shielding."

"Bye, guys," Sigurd said, and waved. "See you inside Sinca."

"Positive attitude, Sigurd," Rivka said. "Positive attitude."

In the command module, Rivka put Sinca up on the dominant projection, its fluxing blue patterns flooding the interior, and played around with tracking cameras on the other screens—Hab 2, Science 1, the storage pods, the almost entirely useless rear-view "parking" camera, switching between them quickly.

"It totally smells like boy in here," Rivka said.

"Do you want me to go back to sleeping in Hab 2?"

"I don't want to smell like boy too," Rivka said. "It is where your berth is, though, I can't stop you. What's our mass now?" she asked.

"Hard to say. We have the impulse readings, too force applied resulted in bar acceleration, but the error margins. . . ." Sigurd made a face.

"We can't put it on a scale or something? Dunk it in a water planet maybe?" Rivka sighed heavily and sank back into the acceleration chair. "This is weird, feeling weight at all."

"It's not weight, really," Sigurd said, in his best professor's voice.

Rivka rolled her eyes. "When does this get exciting?"

"When we go around, keeping the shielding towards Sinca," Sigurd said. "We'll cut the engines for the slingshot, doing the facing with attitude thrusters. I'm not looking forward to that."

Rivka sighed, slouched further in the chair. "Boring."

"Then the getaway, fire the engine, deploy the sails too, maybe, see how those have fared."

"Yawn."

"You've been cheering for us to get here for years and years, and now you're here and threatened with a dozen different spectacular deaths. . . . And you're bored."

"Yet there it is," Rivka said. "You've been right all along, I'm all anticipation and no follow-through. It's why all my papers have great abstracts and crappy endings."

"You're not going to write any papers on this?"

"Of course I will. Start with the facts in 'Observation of Hawking Radiation in Late-Stage Evaporating Small-Mass Black Hole Sinca-177 parenthesis NDS-2012-M17something-something end parenthesis.'"

"Catchy. You really can't even remember the full designation for Sinca-177 after all this?"

Rivka made a brush-off gesture with her right hand. "Then I'll work up a series of controversial papers to release with all the theorizing to run up my publication count and build some momentum."

"I hope as a species we'll have advanced past publish-or-perish."

"Your faith in humanity warms my cold science heart," Rivka said. "I'll start doing some straight refutations of existing theoretical constructs with the new data and then move on to build a base of support for my Nobel Prize-winning work on higher-dimensional singularities."

"It'll be quark-quark interaction," Sigurd said absently as he frowned at his monitors. "Because you're sure it's not."

"What are you going to do?"

"My first paper will be 'Psychological and Moral Effects of Limited-Set Food Choices on an Extended Duration Exploration Mission.' Or 'Color Description Objectivity Within a Relativistic Framework.' That's tenure right there."

"It's blue," Rivka said. "It's just blue."

"It must eat you up to realize I'll get tenure before you." He split the forward view to the flickering streak of the ions being fired continuously out the back.

"I never realized what a beautiful turquoise that is," Rivka said.

"It reminds me of reef diving, that tropical ocean blue," Sigurd said.

"No, it's too green."

"Teal?"

"Definitely not teal. It's cyan."

Rivka waited for a minute. "That's back to your reef diving argument. I thought we'd advanced from there."

"Do you want me to just poll the RGB values?"

Rivka's face soured in offense. "No! How barbaric. Let's discuss this over dinner like civilized people."

Sigurd nodded. "Beef ravioli."

"I'll pull some color swatches."

"Max burn on new course starts in . . . an hour. Shall we?"

He unbuckled and looked out from the ship's stern, where the ion thruster put out a long, straight plume pointing towards the shed modules, sparking diamonds receding into the black, and forward, to the dim rolling haze of a blue photosphere ahead that they reflected. ○

AND MY SINUSES ARE KILLING ME

They never understood urban,
these little green men with their
florotechnology.

Their business was restoring forests.
They brought lovely brochures,
dappled groves in russet and green. . . .

Well, we've got it, don't we? New York choked in ivy,
Palmy Detroit and redwood KC. Don't get me started on Seattle;
you can't drive a block for the algae.

What mad urban jungle
sprouts tulips between taxicabs? It's not right.
I miss honest grey towers, hard blocks of city.

Give me back my smog, little green men.
Let me find
my own urban peace.

—Tina Connolly



Mary Robinette Kowal is the 2008 recipient of the Campbell Award for Best New Writer and a current short story finalist for the 2009 Hugo Award. Her short fiction has appeared in *Strange Horizons*, *Cosmos*, and *Subterranean*. A professional puppeteer and voice actor, she lives in New York City with her husband Rob. Mary's first novel, *Shades of Milk and Honey* (Tor), will be published next year. Her first story for us takes a look at what it means to be a person and how one should deal with . . .

THE CONSCIOUSNESS PROBLEM

Mary Robinette Kowal

The afternoon sun angled across the scarred wood counter despite the bamboo shade Elise had lowered. She grimaced and picked up the steel chef's knife, trying to keep the reflection in the blade angled away so it wouldn't trigger a hallucination.

In one of the *Better Homes and Gardens* her mother had sent her from the States, Elise had seen an advertisement for carbon fiber knives. They were a beautiful matte black, without reflections. She had been trying to remember to ask Myung about ordering a set for the last week, but he was never home while she was thinking about it.

There was a time before the car accident, when she was still smart.

Shaking her head to rid herself of that thought, Elise put a carrot on the sil-plat cutting board. She was still smart, today was just a bad day was all. It would be better when Myung came home.

"You should make a note." Elise grimaced and looked to see if anyone had heard her talking to herself.

But of course, no one was home. In the tiny space of inattention, the knife nicked one of her knuckles. The sudden pain brought her attention back to the cutting board. Stupid. Stupid.

Setting the knife down, she reached for the faucet before stopping herself. "No, no, Elise." She switched the filtration system over to potable water before she rinsed her finger under the faucet. The uncertainty about the drinking water was a relatively minor trade off for the benefits of South Korea's lack of regulations. They'd been here for close to three years, working on the TruClone project but she still forgot sometimes.

She went into the tiled bathroom for some NuSkin, hoping it would mask the nick so Myung wouldn't worry. A shadow in the corner of the mirror moved. Who had let a cat inside? Elise turned to shoo it out, but there was nothing there.

She stepped into the hall. Dust motes danced in the afternoon light, twirling and

spinning in the beam that snuck past the buildings in Seoul's to gild the simple white walls. There was something she was going to write a note about. What was it?

"Elise?" Myung came around the corner, still loosening his tie. His dark hair had fallen over his forehead, just brushing his brow. A bead of sweat trickled down to his jawline. He tilted his head, studying her. "Honey, what are you doing?"

She shivered as if all the missing time swept over her in a rush. Past the skyscrapers that surrounded their building, the scraps of sky had turned to a periwinkle twilight. "I was just . . ." What had she been doing? "Taking a potty break." She smiled and rose on her toes to kiss him, breathing in the salty tang of his skin.

In the six months since she'd stopped going into the office at TruClone, he had put on a little weight. He'd always had a sweet tooth and tended to graze on dark chocolate when she wasn't around, but Elise was learning to find the tiny pot belly cute. She wrapped her arms around him and let him pull her close. In his embrace, all the pieces fit together the way they should; he defined the universe.

"How was work?"

Myung kissed her on the forehead. "The board declared the human trial 100 percent effective."

Adrenaline pushed her breath faster and made the backs of her knees sweat. "Are you . . .?"

"Elise. Do you think they'd let me out of the lab if I weren't the original?"

"No." She shook her head. "No, of course not."

She should have been there, should have heard the success declared. The technology to print complete physical copies of people had been around for years, but they'd started TruClone to solve the consciousness problem. Elise had built the engine that transferred minds to bodies, so she should have gone into the office today, of all days.

She had forgotten. Again.

"I want to hear all about it." She tugged his hand, pretending with a smile to be excited for him. "Come into the kitchen while I finish dinner."

Outside, the first sounds of the market at the end of their block began. Calls for fresh fish and greens blended on the breeze and crept in through the open window of their bedroom, tickling her with sound. Curled around Myung, with one leg thrown over his thigh, Elise traced his body with her hand. The mole at the base of his ribs bumped under her finger, defining the territory. She continued the exploration and he stirred as her fingers found the thin line of hair leading down from his navel.

"Morning." Sleep made his voice grumble in his chest, almost purring.

Elise nuzzled his neck, gently nipping his tender skin between her teeth.

His alarm went off, with the sound of a stream and chirping birds. Myung groaned and rolled away from her, slapping the control to silence the birds.

She clung to him. Not that it would do any good. Myung loved being in the office.

He kissed her on the forehead. "Come on, get up with me. I'll make you waffles."

"Ooh. Waffles." Elise let go of him, smacking his rump gently. "Go on man, cook. Woman hungry."

He laughed and pulled her out of bed with him. She followed him to the kitchen and perched on one of the wicker stools by the counter as he cooked. It almost felt like a weekend back when they were courting at MIT. But the mood broke when Myung laid a pill next to her plate. Her stomach tightened at the sight of the drug. She didn't want the distancing the medication brought on. "I feel fine today."

Myung poured more batter on the waffle iron and cleared his throat. "Maybe you'd like to come in to work?"

The room closed in around her. Elise lowered her eyes to escape the encroaching walls. "I can't." She hadn't gone in since she'd come home from the hospital. Every

day she thought that tomorrow the effects of the concussion would have faded. That the next day she would be back to normal. And some days she was. Almost.

Myung put his hand on hers. "Then take your medication."

She had walked away from the car accident, but it had scrambled her brain like eggs in a blender. Head-trauma induced psychosis. On good days, she knew it was happening.

Elise picked up the pill, hating it. "You're going to be late."

He looked over his shoulder at the clock and shrugged. "I thought I'd take today off."

"You? Take a day off?"

"Why not? My clone." He paused, relishing the word. "My *clone* has offered to do my reports today."

"Is that— isn't that a little premature?" As she said it, she realized that she didn't know how much time had passed since the board had declared success. It felt like yesterday but it had been longer. Hadn't it?

"He's bored, which is not surprising since I would be, too."

If she went to the office, maybe she could see the clone. See the thing they had labored toward. Cloned rats and dogs and monkeys weren't the same as a man. Not just any man, but a clone of her husband. She swallowed against a sudden queasiness. "Who's overseeing him?"

"Kathleen. Sort of. I'll have to look over his report later but we've agreed to let him function as if he were me, to see how he does."

Which made sense. The ultimate goal was to make full clones of high-level people who needed to be in more than one place at once. "Am I a clone, Myung?"

"No, honey." He squeezed her hand, grounding her again. "You're not."

The thing that nagged at her was that she could not tell whether she didn't believe him because he was lying or because the accident had left her with delusions to accompany the hallucinations.

Elise wiped the kitchen table, gliding the sponge across the teak in perfect parallel lines. The phone rang. Startled, she jumped and lost the pattern on the table. Putting her hand over her mouth to slow her breathing, Elise glanced at the clock to see how much time she had lost to cleaning. It was only 2:30. That wasn't as bad as it could have been.

The phone rang again.

She picked it up, trying to remember who had called her last. "Hello?"

"Hi honey. I need to ask you to do something for me." Myung sounded tense and a little breathless, as if the phone frightened him as much as it had her.

"What?" She slid a pad of paper across the counter so she could take notes. Clearly, today was not a good day and she didn't want to make that obvious to Myung.

"Would you come to the lab?"

"I . . ." A reflection in the window caught her eye, flashing like an SOS. "Today isn't a good day."

"The clone misses you."

His words stretched out as if they could fill the ten miles between the lab and the house and then everything snapped. "Misses me? It's never met me."

"He has all of my memories and personality. From his point of view, he hasn't seen you in months." There was a tension in his voice, his words a little rushed and tight. "Please. It's affecting his ability to concentrate. It's depressing him."

"No." The reflection twitched in the corner of her eye, becoming a spider until she looked at it. "I can't."

Myung hummed under his breath, which he always did when he was conflicted

about something. She hadn't pointed it out to him because it was an easy way to tell when he didn't want to do something. He exhaled in a rush. "All right. How's everything at home?"

"Fine." She doodled on the pad. There had been something that she'd thought about telling him. "Oh. There are some carbon matte knives I want to get."

"Really? What's wrong with the ones we have?"

Elise hesitated. "These look nice. All black."

"Ah." She could almost hear his mind click the pieces together. "No reflections. I didn't realize that was still bothering you. I'll order them."

"Thank you."

"Sure I can't get you to reconsider?" He laughed a little. "I miss having you around the office as much as he does."

"Not now."

Elise hung up. Back to the office? Her stomach heaved and she barely made it to the sink before vomiting. Gasping, she clung to the stainless steel as the anxiety flung itself out of her. The back of her throat and her nose burned. If she went in, people would know, *know* that she was wrong inside.

In the dark of the bedroom, Elise counted Myung's heartbeats as she lay with her head on his chest. "I'm sorry."

He stroked her hair. "Why?"

She lifted her head, skin sticky from sweat. "That I won't come to the office."

"It's all right. I understand."

At night, the idea seemed less frightening. She could tell herself as many times as she could count that the office was not dangerous, that nothing bad had ever happened to her there, but her body did not believe. "What's he like?"

"Who?" He lifted his head to look at her.

"Your clone."

Myung chuckled. "Just like me. Charming, handsome, devilishly intelligent."

"A troublemaker?"

"Only a little." He kissed her hand. "You'd like him."

"If I didn't, we'd have problems." Elise rolled onto her back, looking for answers on the ceiling. "You want to use me as a trial, don't you?"

"What? No. Don't be silly."

"Please, Myung. My brain isn't that scrambled." She poked him in the soft part of his belly.

"Hey!"

"It's the logical next step, if these clones are going to do what we told our investors they would. You need to see if a loved one can tell the difference. You need to dress identically with your clone and let me talk to both of you."

Myung hummed under his breath.

"You could bring him here." Elise kissed his shoulder.

He stopped humming. "Not yet. Too many variables. It has to be at the lab first."

"I'll think about it." Her pulse raced, just saying the words. But the queasiness was manageable.

The knives arrived in the afternoon. Elise pulled them out of their shrink wrap and set them on the counter, forming three matte black voids on the wood. No reflections marred their surfaces. She ran a finger along one edge of the paring knife. Like a thread, a line of crimson opened on her finger. It didn't even hurt.

Elise held the cut close to her face, trying to see what would crawl out of her skin. The blood trickled slowly down her finger, exploring the contours. Without the re-

flections, her brain needed some other way to talk to her. She could help it if she opened the gap more.

"No. Myung wouldn't like that." Elise clenched her fist so the blood was hidden. "Put NuSkin on it, Elise."

Yes. That was the right thing. As she put the liquid skin in place, it occurred to her that if she printed herself a new body it would come with nothing inside. "But we solved the consciousness problem. It would come with me inside. With me."

She weighed the chef's knife in her hand and dropped it. The kitchen counter had all the vegetables from the refrigerator set out in neat rows. She had chopped a bell pepper without any memory of returning to the kitchen. Elise cursed. Hands splayed on the counter, she lowered her head in frustration.

The front door opened. "Honey, I'm home!"

Elise picked up the knife, then set it down and scooped the closest vegetables into her arms. Before Myung entered the kitchen, she managed to get them into the vegetable drawer in the fridge.

She let the door close and turned, smiling brightly. "Let me get your martini, dear."

Laughing, Myung caught her around the waist and kissed her. "How was your day?"

Elise shrugged. "Mixed. The usual. Yours?"

"Also mixed. My clone is . . . well, let's say I'm learning how stubborn I can be."

She winced. "I could have told you that."

"Not." He kissed her nose. "Helpful."

She stuck her tongue out. Moments like this beckoned her to fall into them with their allure of normalcy. "Thank you for the knives."

"Sorry?"

Elise pointed at the carbon black knives laid out on the counter. "The ones you ordered for me came today."

"I—" Myung crossed to the counter and picked up the paring knife. "Elise, I didn't order these."

The floor of the room fell away from her. Elise grabbed the handle of the refrigerator to steady herself. "But you said you would. We talked about it."

"When?" Myung's nostrils had flared.

"It's not a delusion." She swallowed and her throat stayed knotted. "You called me. You asked me to come to the office."

"Fuck." He slammed his fist on the counter. "Elise, I'm sorry. It's the clone."

Relief swept her so quickly that her knees gave way. She dropped to the floor, one hand still clinging to the refrigerator. The door cracked open, letting out a cool breeze that chilled the tears running down her face. Thank God. She had not imagined the phone call. She hadn't ordered the knives herself and forgotten. "The clone did it."

Myung crouched by her, wiping the tears from her face. "I'm sorry. He was working on a report and we let him use my office."

"You're letting him contact the outside?"

"No. I changed the passwords—"

Elise started laughing. "And he guessed?"

Myung's skin deepened in a blush and he shut his eyes. "Should have seen that coming."

"Yes, dear." Elise wiped her eyes. "Oh God. I thought it was another sign of crazy."

At that, Myung opened his eyes, pain creasing his brow. "I'm so sorry."

"Don't be." Elise stood, using her husband's shoulder to push herself off the floor. "He bought the knives I asked for."

"With my money."

"Well . . . he's doing your work."

"Point." Myung got to his feet. "And I would have gotten them for you if you'd mentioned it."

"I thought I did." Giggles overtook her for a moment and they both stood in the kitchen laughing. When she caught her breath, Elise said, "Tomorrow, I'll come to the office with you."

The delight that blossomed on Myung's face almost made Elise withdraw the offer. Not that she resented making Myung happy, but she would disappoint him tomorrow. In the context of the lab, her slips of mind would be more apparent.

Elise shifted on the hard metal chair in the observation room. To her left, a mirrored window hid the staff watching her. She angled her head so the reflections were not so apparent. No time for hallucinations today. The rest of the walls were pale blue Sheetrock, meant to be soothing, but clinically cold. The ballast of one of the fluorescent lights buzzed just at the edge of her hearing. They would have to get that fixed.

She put her hands on the linoleum table in front of her and then in her lap again as the door opened.

Myung came in, dressed in a white T-shirt and jeans. He wore athletic socks but no shoes. Glancing at his feet, his dark hair masked his eyes for a moment, like a K-pop star. "We didn't have matching shoes, so opted for none."

Elise grinned, beckoning him closer. "Are they good for a sock-hop?"

He laughed, voice bouncing in a three-note pattern. "That is not on the set of questions."

"You." She pointed at him accusingly. "Aren't supposed to know what they are."

"I don't." Myung held his hands out in mock surrender. "But I'm guessing that it's not."

"Fine. We'll stick to the standards." Elise waved her hand to command him to sit across from her. Her heart beat like she was at a speed dating service. She looked at the list of questions she planned to ask each man. "When we got married, what did you whisper after you kissed me?"

Myung turned red and glanced at the mirror. He wet his lips, leaning forward across the table. "I think I said, 'How soon can we get out of here?'" His eyes were alive as if he wanted to take her right there on the table.

A flush of warmth spread out from Elise's navel to her breasts. At the wedding, his hands had been warm through her dress and she had been intently aware of how long his eyelashes were.

He looked out from under them now with his pupils a little dilated as if he also found the room too warm. "Next?"

"What is our most intimate moment?" Watching him, time focused itself in a way it had not done since the accident. Each tick of her internal clock was crisp and in sequence.

Myung's eyes hooded for a moment as he thought. "Yellowstone. We might have had the whole park to ourselves but there was also this profound sense that someone would catch us in the act. And that you would . . ." He hummed under his breath for a moment, sweeping his hand through his hair. "Let's just say, I knew that you trusted me."

Elise looked at the paper again. She had thought he would say that it was their first time after his vasectomy. At the time he had reveled in the freedom.

"Last question. Pick a number."

"That's it?"

"Yep."

Myung fingered the end of his nose, and Elise could not doubt that she was talking

to her husband. He nodded. "Very nice. Confirmed memory, subjective memory, and random."

She tapped a finger on the paper. "No opinion please. Number?"

"Thirty-six."

"Why thirty-six?"

He picked at the cuticle on his thumb. "Remember the time we went to see that puppet play, 'Between Two Worlds'?" He waited until she nodded. "The guy who thought that he could win his predestined bride through Kaballah had this line, 'Thirty-six, in that number lies the essence.' It stuck with me for some reason."

Myung came in, dressed in a white T-shirt and jeans. Elise's breath hung in her throat at the palpable *déjà vu*. She had seen printed clones dozens of times as parts donors but she had never seen one animated. Had she not been a part of the process to give a clone consciousness, she would have thought that her husband had just walked into the room. Like the other one, this Myung wore white athletic socks but no shoes. Glancing at his feet, his dark hair masked his eyes for a moment, like a K-pop star. "We didn't have matching shoes, so opted for none."

Elise pressed her hand over her mouth, trying to remember what she had said to the first one. No wonder they had wanted her to script her questions.

"Are you okay?" Myung—she could not think of him as anything else—took a step closer.

"It's uncanny is all." Wrong. She should not have said that out loud. It might skew his responses. "Shall we get started?" Elise beckoned him to sit across from her. She looked at the sheet of questions, trying to center herself. The calm certainty she felt before had stripped away, leaving her flustered. "When we got married, what did you whisper after you kissed me?"

Myung turned red and glanced at the mirror. He wet his lips, leaning forward across the table. "I think I said, 'How soon can we get out of here?'"

Sweat coated her skin.

He looked out from under his long eyelashes. "Next?"

"What is our most intimate moment?" Watching him, Elise looked for some clue, some hint that he was not her husband. But perhaps he was, and the Myung she had met first was the clone.

Myung's eyes hooded for a moment as he thought. "Yellowstone. We might've had the whole park to ourselves but there was also this profound sense that someone would catch us in the act. And that you would . . ." He hummed under his breath before sweeping his hand through his hair. "Let's just say, I knew you trusted me."

Elise looked at the paper again. Her hands were shaking and she could barely find air to breathe. Every nuance was the same.

"Last question. Pick a number."

"That's it?"

"Yes." Dear God, yes. She had helped create one of these two men, but she wanted nothing more than to get out of the room. Even though she knew he might be her husband, the uncanniness of having the same conversation twice threatened to shred her mind.

Myung fingered the end of his nose. "Very nice. Confirmed memory, subjective memory, and random."

A shiver ran down her spine. "What number?"

"Seventeen."

Elise had to stop herself from gasping with relief. Had they chosen the same number she might have screamed. "Why seventeen?"

"That's the day we were married." He shrugged.

Something, a darkness flickered in the corner of the room. It would be so much easier to drop into crazy than to keep thinking. "May I see you both at the same time?"

Myung stood. "Sure. I'll ask him to come in."

Forcing her mind into order, Elise folded her list of questions in half. Then half again, creasing the edges with her nail to crisp perfect lines.

The door opened and the other Myung came in. Elise had met identical twins before, but no twin had the commonality of experience that these two men had. One was her husband, the other was a copy and she could not tell them apart. They had even printed the extra weight that Myung carried so both had identical little pot bellies.

The clone carried microchip transponders in his body, and a tattoo on his shoulder, but neither of those were visible. As they talked, Elise slowly noticed a single difference between the two.

The man to her right watched every move she made. His eyes were hungry for her in a way that—"You're the clone, aren't you?"

She had interrupted the one on her left. The two men shared a look before nodding, almost in unison. The clone said, "How did you know?"

"The way you look at me . . ." Elise faltered. He looked at her like he was trying to memorize her.

The clone grimaced and blushed. "Sorry. It's just that I haven't seen you in months. I miss you."

Myung, the original Myung, picked at his cuticle. "I told you she could tell the difference."

"But you were wrong about the reason." The clone smirked. "She could tell because you don't love her as much as you used to."

"That is a lie." Myung tensed visibly, his fist squeezing without his seeming awareness.

"Is it?" The clone shook his head. "Everything else is the same, why would my emotional memories be any different? The only difference between us is that absence makes the heart grow fonder."

"Stop." Elise stood abruptly, her chair squeaking against the floor. She pressed her hand against her forehead.

Both of them looked abashed. In stereo they said, "I'm sorry."

"It doesn't matter." Her thoughts were fragmenting. The reflection in the window moved, a child trying to get her attention. Elise shook her head. "You brought me down to see if I could tell the difference. Now you know that I can."

Her Myung said, "But not when we were separate."

"No." Elise fingered the paper on the table. "Which of you came in first?"

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"I did," the clone said.

They sat in silence. Elise tried to fold the paper into another square. "I think I'm ready to go home."

"Of course." Her Myung stood, chair scraping across the floor.

The clone leaned forward on his. "Won't you stay for lunch?" His voice cracked as he asked, as if the request were more urgent than just a meal.

Elise raised her eyes from the paper to his face. The way his brows curled in the middle. The way his eyes widened to show a rim of white under the dark iris. The way his soft lips hung a little open. All of the minute elements that made the whole of her husband pulled, begging her to stay.

And the other Myung, the original, stood next to him, legs spread wide with a slight tension in his arms as if ready to protect her.

No. Not to protect her, but to protect his right to have her.

"Yes." She put her hand on the clone's, startled by the familiarity of the contact. "Yes, of course I'll stay."

The smell of sautéing onions wafted in from the kitchen. Myung had offered to cook breakfast before going to work, his usual ploy when he felt like he needed to make up for something. Clearly, he had no idea that breakfast was like a confession that the clone was right; Myung did not love her as much as he used to.

That wasn't quite true. Myung loved her the same as before—what had changed was that now there was a version of him that missed her all the time. Elise stretched under the covers and the cotton caressed her body like a lover. "I am the forbidden fruit."

Myung's cell phone rang on the bedside table where he'd left it. Rolling over, she picked it up. Caller ID showed the office. Elise got out of bed, not bothering with a bathrobe and carried it toward the kitchen.

Myung met her partway down the hall. He took it, mouthing his thanks even as he answered.

Elise lifted the hair away from her neck, knowing that it would raise her breasts and make her torso look longer, daring him to choose work over her. His eyes followed the movement. Lips parting, he reached for her. Stopped.

His face shut down. Myung put one hand on the wall and squeezed his eyes closed. Dropping her arms, Elise shivered at the sudden tension in his frame.

"No. No, I heard you." He leaned against the wall and slid down to sit on the floor. "Did he leave a note or . . ." His eyes were still closed, but he covered them with his hand.

Elise crouched next to him. Her heart sped up, even though there was nothing she could do.

"No. I haven't checked email yet." Myung nodded as if the person on the other end of the line could see him. "I'll do that. Thanks for handling this. Tell Larry not to do anything until I get in."

He hung up. Cautious, Elise touched his thigh. "Myung?"

Her husband slammed his head against the wall. Elise jumped at the horrible thud. Cursing, Myung threw his phone down the hall and it ricocheted off the floor. Tears glittering on his cheeks, he hurtled to his feet. "He killed himself. Sent us all a video. By email."

Myung was halfway to the office before Elise could pull herself together enough to stand.

On the monitor, the image of Myung leans close to the screen.

"This is the clone of Dr. Myung Han. I am about to kill myself by lethal injection. You will find my body in the morgue."

"Before I do, I want to make it perfectly clear why I am taking this step. With the animals we tested, the next step in this process is dissection. We must do this to be certain that the cloning has no unexpected side effects and to fully understand the mechanism by which the consciousness transfer works. My original knows this. I know this. He will not do it *because* the experiment has been a 100 percent success. We are identical, more so than any set of twins. He sees terminating the experiment as murder.

"Make no mistake, he is correct.

"Which is why I am terminating the experiment myself. I am not depressed. I am not irrational. I am a scientist. The experiment needs to continue."

He stands and walks out of the room.

Elise stood behind Myung's chair, scarcely breathing. He reached to restart the video.

"Don't." She stopped him with a hand on his shoulder. It was bad enough seeing it once, but to dwell on it courted madness.

Under her hand, he trembled. "I didn't want this."

"I know."

He slammed his fist against the table. "If it had been me, I wouldn't have done it."

"But—" Elise stopped herself, not wanting to blame him.

"What?"

She saw again the clone begging her to stay for lunch. "He's trapped in the lab all the time. Were you ever going to let him out?"

Myung slumped forward, cradling his head in his hands. After a moment, his shoulders shook with sobs. Elise knelt by the side of the chair and pulled him into her arms. The rough stubble on his cheek scraped her bare skin. She pressed closer to the solidity of him, as if she could pull him inside to safety. An ache tore at her center as she rocked him gently and murmured nothings in his ear.

She had known the clone for a matter of hours, or for as long as she had known Myung, depending on how you counted it. The two men had only a few months of differing experience. The bulk of the man who had died belonged to her husband. But the differences mattered. Even something as simple as a number. "Thirty-six," she whispered. In that number lies the essence.

As Myung went to the elevator, Elise stood in the door to watch him. She could not quite shake the feeling that he wouldn't come home. That something about the place would compel him to repeat his clone's actions. When the doors slid shut, she went inside the apartment.

In the kitchen, Elise pulled out the matte black knives that the clone had sent her and laid them out on the counter. He had known her. He had loved her. She picked up the paring knife, twisting it in her hands. It wasn't right to mourn him when her husband was alive.

"Elise?" Myung stood in the doorway.

"Forget som—" Adrenaline threaded its way through all her joints, pulling them tight. He wore a plain white T-shirt and jeans; his face was smooth and freshly shorn. Myung had not had time to shave. This man was leaner than her husband. "I thought . . . How many clones are there?"

He picked at the cuticle on his thumb. "Myung made just one."

"You didn't answer my question." Elise gripped the paring knife harder.

"I'm a clone of the one you met. Unrecorded. I started the process as soon as the building was empty last night." He swept his hand through his hair and it fell over his eyes. "We have about ten minutes of different memories, so for practical purposes, I'm the same man."

"Except he's dead."

"No. Ten minutes of memory and that physical body are all that is dead." Myung—she could not think of him any other way—crossed his arms over his chest. "It was the only way to escape the lab. I had a transponder and a tattoo that I couldn't get rid of. So I printed this body from an older copy. Imprinted it with my consciousness and then . . . that's where our memories deviate. As soon as we were sure it was a clean print, he went to the morgue and I left."

She should call the office. But she knew what they would do to him. Insert a transponder and lock him up. "Why are you here?"

His eyes widened as if he were startled that she would ask. "Elise—the place where the original and I differ, the thing he cannot understand, is what it is like to live in the lab, knowing that I'd never be with you. He doesn't know what it's like to lose you and, believe me, knowing that, I hold you more precious than I ever did before. *I love you.*"

The raw need in his eyes almost overwhelmed her. The room tilted and Elise pressed her hand against the counter to steady herself. "I can't go with you."

"I wasn't going to ask you to."

"But you were going to ask me for something."

He nodded and inhaled slowly. "Would you clone yourself? So I'm not alone."

Elise set the knife on the counter, in a careful row with the others. She walked across the room to stand in front of Myung. The vein in his neck throbbed faster, pulsing with life. "Is it any different? Being a clone?"

"There's a certain freedom from knowing that I'm not unique. But otherwise, no. I feel like I am Myung Han."

Putting one hand on his chest, the heat of his body coursed up her arm. "I need to know something."

He raised his eyebrows in question.

"After the accident . . ." She did not want to know but she had to ask. "Am I a clone?"

"Elise, there's only one of you."

"That's not what I asked. The original won't tell me, but you—you have to. Am I a clone?"

"No. You are the original and only Elise." He brushed the hair away from her face. "Everything else is head trauma. You'll get better."

She had braced herself for him to say that she was a clone. That she had died in the crash and the reason she couldn't think straight was because the process had been too new, that she was a failed experiment.

Elise leaned forward to kiss him. His lips melted against hers, breath straining as if he were running a race. She let her bathrobe fall open and pressed against him. Myung slipped his trembling hands inside the robe, caressing her with the fervor of their first date.

Parting from him burned, but Elise stepped back, leaving him swaying in front of her. She closed the robe. "When I'm well, if I can. I will."

Myung closed his eyes, forehead screwing up like a child about to cry. "Thank you." He wiped his hand across his face and straightened.

"They'll notice that another body was printed and come after you."

"Not right away." He picked at his cuticle. "I took my original's passport from the office. Knowing me, it'll take him awhile to realize it's missing."

She felt herself splitting in two. The part of her that would stay here and see her husband tonight, and the part of her that already missed him. At some point, the two halves would separate. "Where are you going?"

He tucked a loose hair behind her ear. "Yellowstone."

Elise caught his hand and kissed it. "I will see you there." ○

HUMAN RESOURCES

This wasn't the place I thought I'd be, and even getting here was hard.

—Jennifer Jones, "Jordan County Park"

I thought it was a funny place for a job interview; the floor was half-an-inch deep in water, or something like it, with galvanized garbage can lids for stepping-stones. There were twitching, sudden movements in the fluid; maybe fish, but I didn't want to stare. It was important to seem completely at ease.

He was floating directly above an enormous ebony desk in lotus position with his eyes shut, and it didn't seem fair that I had had to climb the last twelve stories on a ladder made of goat hair, as far as I could tell. Two dirty porcelain plates, a fingerbowl, wine glass, water goblet, demitasse, and assorted utensils hovered in the perfumed, pink air, orbiting him like deformed planets circling a dead sun.

I waited patiently, crouched on the last lid, clutching my purple briefcase to my bosom, admiring the view of the smoking ruins of the airport and labyrinth through the bullet-riddled floor-to-ceiling glass. Far out to sea, I thought I glimpsed a vast, dark armada moving toward the next continent.

He asked me if I'd be willing to relocate, learn Unix, play golf, drive a Hummer, insure my life in his favor, get a sex change, and wear nothing but lime green. I said it might be difficult to find hiking boots that color. He told me I had to grow my own wings.

—F.J. Bergmann



TWO BOYS

Steven Popkes

Although he spent ten years getting a B.S. in Zoology and an M.S. in Neurophysiology, Steven Popkes now works on avionic software for NASA's Ares Rockets. In his spare time, Steve has published two novels and about thirty short stories. His latest tale for us takes a look at how Neanderthals might cope with the modern world.

Now:

Alice wasn't sure what she expected.

She'd heard from both Janesha Craig and Freddy Ali that a Neanderthal family had moved into Bolton. The rumor was there was a boy and he'd be in school today. Home room came and went. Rumors washed over the school: He'd come and decided the school was too intimidating, the school wasn't good enough for him, he wasn't good enough for the school, the secret service decided security wasn't sufficient, he'd run away from the secret service. The rumors agreed on one thing: He was here in town and he wasn't coming to Bolton Middle School.

"I bet there is no Neanderthal," Alice whispered to Janesha in third period. "I bet it was just someone who had himself modified to look like a Neanderthal."

Janesha thought for a moment. "Then they better have a good lawyer," she said. "My Daddy was on the Mattel team against a Neanderthal form copyright suit last year? And *he* said Mattel never had a chance. And that was just over that silly action doll and not an actual modified *person*." Janesha shook her head. "Daddy says everything's covered by copyright. Nothing left for us but piercing and scarification. *Boring*."

Neanderthals had been all over the news as long as Alice could remember, brokering a peace deal in Malaysia, managing environmental reconstruction in Brazil. It seemed like every Social Studies class had some current events topic in which they figured prominently. She especially liked the restoration of the Brazilian highlands. But she'd never seen a Neanderthal in the flesh.

When she had a chance, Alice looked up Neanderthals. They were recreated fifty or sixty years ago from a frozen Neanderthal woman found under the retreating Paradies Glacier. Now they had two reservations—one in North Dakota and the other near Basel, Switzerland. She could access all the technical literature she wanted, and if she ever wanted to learn about nucleotide differences and phenotypic expression of hox complexes, she'd know right where to look. Just not right now, thank you very much. But there was next to nothing about their likes or dislikes, culture or marriage practices. She lowered the credibility rating and found out it was really the Neanderthals that had caused the melting of the Greenland glaciers, triggering the coastal flooding and collapse of the arctic fisheries at the same time. Neanderthals used up rationed power for their own purposes, thus causing the brownouts. That was how they melted the glaciers. Neanderthals had penises the size of your arm—and *you could, too!* Neanderthal girls were born with beards. Don't make a Neanderthal mad; he'll rip off your head and crap down your neck. Really. No fooling. *Really*.

In other words, only Neanderthals knew about Neanderthals, and they weren't talking.

Then:

Tom Nicholson spoke to himself under his breath as he wrote the words. "Outside of Antarctica, the glaciers of Greenland are the largest on earth."

He liked writing with a pencil, by hand, on white ruled paper. He liked the smoothness of the sheet, the texture of the graphite on the paper, the feeling of the tiny yellow pencil impossibly dwarfed by his huge hand. Later, he'd scan or dictate the report into his computer. But for now, he enjoyed just writing it out.

"The warming trend now seems irreversible," Tom continued. "But even so, it will be fifty years or more before the Greenland Glacier is completely melted. The consequences—"

"Tom?" called his mother from downstairs.

"Working on my paper, Mom," he answered.

"Come on down," Agatha called up.

Tom sighed and slipped off the chair. He stretched for a moment. He should figure out how to cushion the chair to fit the curve of his back. One of these days.

He started to jump down the stairs, checked himself. While it was fun to jump the full length down to the landing, the noise scared Mom. Tom walked down instead.

He turned the corner into the kitchen. She was waiting for him, standing next to a small table with a cake on it. On the corner counter was a continuous news feed. This time it was environmental destruction in Brazil and how the denuded rainforest was being destroyed by an unconfined Amazon River. He ignored it. There was always something on. Mom was a news junkie. Tom stopped in front of the cake. It wasn't his birthday. Not Christmas. Then, he had it.

"Conception Day." He laughed.

"You forgot?"

"Hey, I bet most people would forget once in a while if they had two birthdays."

Agatha nodded and led him into the kitchen.

It was chocolate with bananas. Nice. "Any ketchup?"

Wordlessly, she pulled a bottle out of the refrigerator and set it in front of him.

"The paper's almost done," Tom mumbled around a piece of red-smeared cake. "I can hand it in later today."

Agatha nodded absently and sat across the table from him. "You're fifteen now."

"Not until spring, Mom. It's *Conception Day*. Not *Birth Day*."

"Would you like to be home schooled?"

Tom chewed on a piece of cake so he didn't have to answer immediately. He glanced at his mother warily. "No," he said after he had swallowed.

"Are you sure?"

"Mom, I like school. Absarokee is fine. I got friends there."

"Other modified children."

"Not all of them but some. Yes. Modified just like me. We have a good time together."

"You could learn more at home. I could teach you."

"Mom. I like school. I want to stay. In school. Okay?"

"All right." She sat back in her chair and folded her hands. "You are *fourteen* years old, after all. You should be able to make some of your own decisions."

Great. Now he had hurt her feelings. It was only the two of them. Agatha had told him about an anonymous sperm donor when he was six. Tom had never wondered much about his absent father. He'd read about kids so desperate to know their fathers they'd traveled hundreds or thousands of miles to meet them. He didn't understand it. What did he need with some man he'd never met?

"I only want what's best for you," she said distantly.

"I know. But I'm doing okay at school."

"I know."

Tom bit his lip. He really didn't want to get into this. But if he didn't, who knew what might come later? "Is there something wrong?"

"No."

"This is about Kurt Nakana, isn't it? His mom called, right? I just picked him up and held him. I didn't hurt him. I know the rules. I was careful. But he kept after me about looking different. He hit me a couple of times, but I didn't think anything of it. And then he picked up a rock. Somebody was going to get hurt. Not me, maybe. But Sol isn't very strong. Rahul looks like a wolf boy, but he scares easy. Kurt wouldn't take no for an answer. So I took the rock away and held him up in the air until he started crying. I wanted him scared. But that's all that happened. I *swear!*"

His mother watched him for a moment. She put her hand on his. "I'm not concerned about Kurt Nakana. I'm sure you didn't do anything I wouldn't be proud of."

"Then why all the worry about school?"

"Go on. You'll be late."

Now:

Alice used her personal project time to see if there actually was a Neanderthal in Bolton. There was no news about Neanderthals, of course. Whenever she searched for news about Neanderthal families, minus all the political rot, she found no more than articles on old Tom Nicholson, P'Chk Pandit Nicholson, and the relentless Neanderthal use of public privacy laws.

But the real estate records were a matter of public record and easily accessible.

Alice looked at properties recently bought and sold, figuring Neanderthals would buy rather than rent so they could renovate a house to suit their needs and because they could probably get better privacy. She found three sales that might suit and after school, she lied to her mother. Then she told Janesha she was going looking for cave men.

"Want to come along?" Alice zipped up her backpack.

"You have got to be kidding. I'd rather do homework," Janesha said with a smile. "But have fun. Maybe he's cute."

"Don't be mental."

The second sale was on a cul-de-sac not far from home. It was a nondescript white ranch house with a slab porch. The property butted up against park land. The yard was trimmed but uninspired. There were no flowers, but a small fruit tree grew in the middle of the front lawn. A boy sat at a picnic bench, writing in a notebook. From the slant of his neck and size of his shoulders, Alice guessed she had found pay dirt.

When the boy looked up, she knew she was right.

They stared at each other for a moment. Then the boy closed the notebook and walked over to her.

"Bill Nicholson," he said and held out his hand. "I'm the Neanderthal you must be looking for."

Bill was shorter than she was—he couldn't have been more than five-three—but broad. He wore a T-shirt that had a picture of a gerbil tightly wrapped in black tape labeled "Spastic Holocaust." Not a great band, but not bad. He wore thin shorts even though there was a hint of frost in the air. Maybe the cold didn't bother him. Alice noticed the muscles in his arms and the size of his hands, the thick cords of his legs. Even Tim Matthias, who had been in gymnastics since he was three, didn't have muscles like that. Bill looked like he could toss Tim over the top of the school.

He had black eyes marked with thin white streaks and a hint of laughter. That's

what struck her then: Bill looked like he was about to laugh. Not at anything particular. Just in general.

"Who says I'm looking for anybody?" This close, she could smell him, a dusty, papery smell. Like old books, but completely different.

"I know the neighbors. You don't live around here. And nobody is going to *walk* up this road by accident; they're going to be looking for one of us—me or Tom. You're too young to be a reporter—and they would know better than to look for one of us anyway. So: it's either celebrity hunting for Tom or some high school girl looking for the new Neanderthal in town."

"Tom?"

"Old Tom Nicholson is visiting us," Bill said. "You want to stay for dinner?"

"Tom." She blinked at him, not immediately comprehending. "Tom *Nicholson*? The first Neanderthal?"

"You catch on quick," Bill grinned at her. "He flew in last night from Basel. You have a name?"

"Alice." Alice felt suddenly shy. Tom was *famous*.

Bill picked up on it. "It's okay. Don't worry. You'll like him. Raised by humans to be a regular guy."

"Oh." She made the connection. "So, is he your grandfather?"

Bill laughed, a sound like a bass drum being pounded by walnuts. "It's only been three generations. Truth is we're all related. And just to confuse matters, a lot of Neanderthals take the Nicholson name to spread the blame." He grinned at her.

She stared at him. She wasn't sure what to make of that. Was it a joke? "Who's to blame?"

Bill chuckled. "Exactly. We'll get along just fine."

Then:

The discussion in biology class was on organ modification. The instant the subject came up, the class looked at Tom and Rahul. It bothered Rahul but Tom didn't mind. After all, wasn't Rahul the spitting image of Jack Brubaker, the Wolf Man? Wasn't Tom, himself, the perfect representation of the Swiss Ice Maiden? That is, if she weren't dead. If she hadn't been frozen thirty thousand years ago. If she were male.

It was just the nature of the town. The first whole body modification had been publicly uncovered here in Absarokee when that reporter discovered the Wolf Man. People interested in variations on the human theme tended to settle here. There was nothing special about it. Everybody started out from the same human embryo.

Class ended and Tom made his way to the gym. As he walked past Price's math class, he saw Kurt Nokana watching him.

The locker room was quiet. The current PE class was still in the gym and the next class hadn't arrived. He grinned. Tom liked to change by himself.

What he'd said to his mother was only generally true. He *did* like school. He *did* have friends. But that didn't mean the school didn't have its share of idiots. Kurt Nokana didn't stand alone. Tom liked baggy clothes that hid the differences in his physique and he could meet taunts with a smile. The modifications his mother had purchased included strength and speed the others couldn't match. Nobody in his right mind would fight him. But kids were like dogs; they gained strength in numbers. His big hands, slope shoulders and slanted face couldn't be hidden. They invited the pack's interest. Tom didn't like to give them any extra opportunities.

Sol was standing next to the wall when Tom came down the row of lockers. Oh, well. Sol was better company than some.

"Sol," Tom said gently. "You have to change. We're playing baseball today."

Sol shook his head. "Catolico Rojo bomb threat in New York again. I saw it on the bus."

"That's got nothing to do with us out here. Not today. You need to change your clothes."

"Don't want to." He looked completely miserable.

Tom could see what was coming clearly now. Sol was going to start whining during baseball. Kurt or one of his friends would do something to Sol, something calculated to cause one of Sol's spinning seizures. They'd stand around Sol, laughing at him when he couldn't stop walking in a circle. Tom wondered if Sol's parents thought Sol's enhanced math ability was worth it.

Then, when Coach Driscoll was distracted, Kurt would have his chance at pay back against Tom. It could be something innocent—yanking Tom's pants down or something—but Tom doubted it. Kurt had already learned he couldn't embarrass Tom. You had to care what the pack thought to be embarrassed. Tom was perfectly able to pull up his shorts without stopping play. And what was worse, Tom had embarrassed Kurt in a test of strength the way an adult would calm down a toddler. Kurt needed visible effect. That meant something more serious.

Tom sighed. It seemed to him he wasted a lot of time figuring people out. Did people like Kurt even realize what they were planning or did they think things just happened to them? As far as Tom could tell, most people never knew what they were going to do.

Tom wasn't ready to face Kurt just yet. Tom chuckled. Kurt was the alpha male in his monkey group. Stronger and louder than the rest of them. But to get revenge on Tom, he had to use someone as weak as Sol.

He thought it through, then stood up and walked over to Sol. Sol was crying quietly. Pretty funny any way you look at it.

"Be quiet, Sol," Tom said softly.

Sol shrugged. "Can't."

Tom slapped him gently.

Sol shook. Then, slowly and steadily, he began to turn in place.

Tom arrested the spin and got him to walk outside the locker room to the hall. As soon as Tom let Sol go, Sol began spinning again.

Vice Principal Brigham was walking down the hall.

"It's Sol Pearson, sir," Tom told him. "He's having a seizure. He gets them all the time."

"I know that," Brigham snapped. He was one of those teachers who didn't like children. "I'll take him to the nurse."

"Thank you, sir."

By the time Kurt and his buddies reached the field, Tom was hitting pop flies to the coach.

"Hey, guys," he said cheerily. "Ready to play ball?"

Now:

Alice didn't know what to expect from a house filled with Neanderthals. On the porch was a worn cane bottom chair. As they walked up the driveway, an older Neanderthal opened the door and stepped out. "Hey, Bill," he said.

"Hi, Dad. Alice, this is my dad, Sidney Nicholson."

Bill's father looked past him. "Bill! You brought somebody for dinner. How thoughtful." He grinned.

Alice had a sudden image of the main entrée.

Mister Nicholson waved at her. "Got you. Saw it on your face. We're vegetarians."

"Really?" Alice was surprised. It didn't fit.

"Yeah," Bill said. "Doesn't taste the same if you don't kill it yourself."

Alice stared at him. "Is that a joke?"

Bill stared back. "Not if I have to explain it."

Sidney chuckled. "Go on in and get a soda or something. Frieda got to be a little much so I came out here for a rest. I'll be in directly."

"Frieda?" Alice murmured as they stepped through the door.

"Sidney's wife."

"And your mom?"

Bill shrugged. "It's complicated."

The house opened to the living room. One wall had been turned active and there were various windows open here and there on different landscapes and a few news stations Alice didn't recognize. But on one she recognized P'Chk Nicholson making a speech; she knew him from assignments in Mrs. Dalglen's class. There was a Neanderthal in an adjacent window commenting on the image in a guttural, clicking language.

Bill followed her gaze. "All news. All Neanderthal. All the time. Come on."

Frieda was in the kitchen cooking something with garlic in it. Alice could smell that much. She was taller than either Sidney or Bill, pale and fully human. Now, Alice was really confused.

Frieda glanced up from the stove, saw Alice past Bill. "She better not be a girlfriend."

Alice barked a short laugh, more out of surprise than anything else. Bill smiled at her.

Frieda turned back to her stove. "You say that now. But then he gets under your skin and the next minute you're married to him. Believe me, I know."

Bill stepped up behind her and kissed her cheek. "Come on, Frieda. Don't you love us?"

"What do you know about love?" She pushed him away. "You or your father."

"Everything you taught us. Where's Tom?"

"In the back. Dinner in twenty minutes. Get out of here."

"She's *not* your mother, is she?" asked Alice as they walked down the hall.

"Hardly. It's—"

"—complicated. You said."

Bill nodded, unfazed. "We do things differently. Partly because we're not human and partly because we only got started a few decades ago. The Mothers raise us until we're of age. Then, we move in with the Fathers. That happens most of the time. But I like Sidney—he's not just someone who took me in. He's my real dad—and he has a human wife. So the Fathers allowed me to come down here with him. In a couple of years, I'll go back to the reservation and sire a few kids. Then, it's time to go to work."

"Your marriages are . . . arranged?" Alice was appalled.

"We don't usually get married at all. Just the Fathers and the Mothers. Sometimes, people pair up, but not all that often. Neanderthals don't pair bond the same way as humans."

"Sidney did."

Bill smiled thinly. "Yeah. We're still trying to figure that one out."

The hall ended in the back porch. Instead of a slab with a narrow roof over it, as in the front porch, this was an enclosed deck. The sun was getting low in the west and the light on the porch was golden.

An old man sat in a captain's chair facing the sun. He looked *old*. Thin and used up. His fingers were curled into loose fists and the skin was blotched. But Tom Nicholson couldn't be much more than fifty. Sixty, tops. She'd read that much. He looked twice that age. His head leaned to one side and he was snoring softly. A cane leaned against the wall in front of him.

"Have a seat," Bill gestured to one of the other chairs.

"What do we do now?" Alice sat as far from Tom as she could.

"Wait for him to wake up." Bill settled himself down, comfortably. "Or until dinner."

Then:

Tom was good at throwing and hitting. Running, not so much. His team chose him to be pitcher. He toned it down. Once in sixth grade he'd thrown a runner out at first and broken the hand of the boy playing first base. He'd only been allowed back in school on probation. That year there had been a rumor he was the clone of Babe Ruth.

But this was just a game in PE.

He was up to bat in the third inning, two outs and a runner on second. He settled himself and Jimmy Tedeschi, one of Kurt's gang, threw the ball at his head.

It was such a surprise that Tom just stared at the ball until, at the last minute, he caught it.

He tossed the ball gently in his hand. This had clearly gotten out of hand. Tom stared at Jimmy speculatively. Jimmy paled. Tom remembered that kid in sixth grade.

Kurt called lazily, and safely, from center field. "Come on, Nicholson. Play ball."

Tom smiled back to give the impression of no hard feelings. He tossed the ball back to Jimmy.

On Jimmy's next pitch, Tom slammed it right past Jimmy's ear directly at Kurt. Kurt caught it neatly but Tom knew it hurt.

"Third out," Kurt said just loudly enough to be heard in the infield.

"So it is," said Tom as the bell rang.

Kurt was going to have to be dealt with.

Now:

"Do I smell garlic?" Tom said.

Alice and Bill hadn't been sitting there more than five minutes.

"Did we wake you up, old man?" Bill said easily.

"What? Did you show me some respect while I slept? Couldn't be. I'd be dead of shock." Tom stood up slowly. "I'm Tom Nicholson, missy," he said to Alice as introduction.

"Alice Nokana."

Tom stared at her speculatively. "Kurt Nokana's daughter? He married late, didn't he?"

Alice stared back at him. "Do you know my father?"

"Knew him when we were kids back in Absarokee. Didn't you know I was from here? You must have looked us up when you met Bill."

"It wasn't mentioned."

Tom retrieved his cane. "Damned lawyers. They always go too far. I just wanted us to have a little privacy."

"Sidney says it keeps up the mystery," Bill said quietly.

Tom laughed shortly. "I bet it does at that." Tom walked ahead of him.

"This is weird. Did you know he knew my father?" Alice whispered to Bill.

"No, he didn't," said Tom, turning at the end of the hall. "Neanderthal ears. And I didn't know you were coming. And Sidney and his lovely wife Frieda had no idea the Nokanas were in Bolton. Just me." He lifted a hand casually. "Or you can believe we really did melt the Greenland glaciers."

Alice didn't know what to think. She silently followed Bill into the dining room.

"Garlic's not a spice," Tom said as he lowered himself into a chair. "Not the way Frieda uses it. It's a vegetable."

"It's the arsenic, Tom," Frieda said sweetly as she brought in two separate plates. "Garlic's the only thing that will cover the taste." She handed one to Alice. "I'll share my dinner with you."

Tom grinned at her. "I like that one. I'll use it later."

Sidney came in the front door. He stopped in the living room for a moment and then came in the dining room. "Pandit's scheduled a news conference at seven."

Tom nodded. "Plenty of time for a good meal."

Alice set her plate down. It was macaroni and cheese. Frieda's plate held the same. Nothing strange about it.

Frieda returned with a covered bowl. She lifted the top and a wave of garlic and hot peppers rolled over the table. Alice choked.

"Breathe through your mouth, dear," Frieda said serenely. "It's easier."

"What is it?"

"You don't want to know. I call it—well, never mind what I call it. It's Neanderthal bouillabaisse. I have to use a respirator when I cook it."

"Come on, Frieda," said Tom. "Surely you've gotten used to it by now."

"Not likely," Frieda snorted.

Sidney chuckled "Last time she ate some she had the runs for three days."

"That's quite enough, Sidney," Frieda glared at him.

Sidney shrugged and spooned some stew into his bowl.

"You see," Tom said conspiratorially to Alice. "This sort of food is the secret source of Neanderthal strength."

"No, Tom," Bill said around a mouthful. "That comes later. I know. My bedroom is next to yours."

"Don't say that," Tom said. "She might want to talk to me after dinner. You'll scare her off."

"She can use Frieda's respirator," Bill said generously.

This is like living in some strange play, Alice thought as she picked at her macaroni. She couldn't help wondering if they were like this all the time or just when they had a human guest.

Sidney stood up. "Okay. Time for the analysis."

"Bring your bowls," Frieda said wearily.

They decamped to the living room. The Neanderthal speaking before had erected a map showing the Middle East. Sidney thoughtfully put on the subtitles. It was a recounting of the history, treaty by treaty, war by war, of the region. From what Alice was reading, the commentator had just started describing the Six Day War back in 1967.

Bill sat on one side of her on the sofa, Sidney on the other. Tom settled down into an easy chair in the corner. Frieda pulled in one of the kitchen chairs and sat next to Sidney.

"Pandit did a good job," Tom said quietly.

Sidney shrugged. "Persuaded a bunch of idiots to see what's been in front of their faces for a hundred years."

Tom leaned towards Alice. "Persuading idiots is what we do best."

"Tom," Sidney said quietly. "She's still a guest." He muted the display.

"Hell, Sidney. It is what we do. What jobs do Neanderthals always take? Negotiators."

"Paleontologists," offered Bill.

Tom chuckled. "That's not a job. That's an avocation."

"Why?" Alice interrupted them. "Why do you do it? I've seen you in the news since I was a kid—before I ever knew what a Neanderthal was. You're always there: environmental conferences, trade deals, diplomatic missions. Why?"

Silence fell.

After an uncomfortable moment (Alice had the idea that the length of that moment was purely Tom's decision), Tom cleared his throat.

"Bill?" Tom looked over to him. "What does 'P'Chk' mean?"

"Speaker for a Dead People," Bill said immediately and grinned.

Tom grinned back. He leaned toward Alice. "There's no doubt in any of our minds your ancestors did my ancestors in. Probably skinned them and ate them. We're just as smart as you. We're not good at abstract math but we're whizzes at geometry. You're taller. We're stronger. You can run for miles but we're quicker on the sprint. Any one of us could take six of you but you breed more quickly. Why did we get killed off?"

Bill snorted. "Innate genetic inferiority."

Tom shrugged. "Remains to be seen. Try again."

Alice stared at Tom. "I have no idea."

"You guys are better organized." Tom settled back in his chair. "You have churches, political parties, tea societies, save-the-glaciers groups, mourn-the-glaciers gatherings, unions—in short, every possible way a weak creature can organize itself against a stronger creature. We had *none* of that. The surprise isn't that it happened. The surprise is it didn't happen instantly."

"How do you know that?" Alice felt heat rising in her face. There was something about Tom that just *got* to her. "You weren't there."

"Of course not. But who's better qualified to speculate than me?" Tom cackled. "We're only tolerated because of the recent invention of collective guilt. The environmentalists *love* us. We're the exterminated species that came back from the dead. Countries love us—we have no allegiances. We have *no* historical axe to grind with any one group. And we don't have a human point of view. We can come into a situation absolutely clean—better than the Red Cross or the United Nations, since we can't be accused of being a tool of the constituent country."

"Why should we listen to you?"

Tom grinned at her crookedly. "Stand *up*!" he said in a sudden, deep voice.

Without thinking, Alice was on her feet.

"It's called innate authority," Tom said mildly.

"He's on," Sidney said and demuted the display.

P'Chk Pandit Nicholson stepped up to the podium. He seemed to radiate strength without effort. Alice could feel everybody's gaze, including her own, drawn to him. Was this what Tom meant by "innate authority"?

Pandit nodded and smiled around the room. He opened his notes, glanced at them to make himself ready and opened his mouth to speak. At that moment, one of the reporters stood up and shot him in the face. The blood exploded behind him and he fell. There was pandemonium and screaming.

Sidney muted the display. Tom looked at Sidney. Then looked away. They pursed their lips. Their faces grew red.

Alice looked at Bill. He stared serenely at the ceiling.

Frieda buried her face in her hands.

Sidney broke first, howling with laughter. Tears streaming down his face. Tom pounded the floor with his cane. Bill wouldn't look at her but he was giggling just the same.

Alice looked up at the display. P'Chk was slumped over the podium. Three people were shouting at each other, over him. Two men were leaning over him. P'Chk was eased to the ground. Then, the feed was cut and a human announcer was speaking silently to the camera.

Tom got control of himself and rubbed his eyes with a tissue. Sidney leaned back against the sofa. Bill was catching his breath. Frieda was crumpled over, her shoulders shaking as she wept.

"You are all crazy," Alice said. "Psychotic."

"Oh, yeah," Tom said as he discarded the tissue into the wastebasket. "That's another thing we have that you don't. A sense of humor."

Then:

Tom pulled the mail out of the box and looked through it as he walked up the driveway. There were the usual pleas from various charities, a continuing clamor for money and empathy. It seemed to Tom that Agatha was on every mailing list in the country. Below those, Tom found a letter from someone named Bott addressed from the school. Tom knew no one at the school named Bott. Agatha wasn't home from the lab yet. This wasn't all that unusual. Maybe he'd make an omelet for dinner. Some kind of peace offering.

He put the mail and his backpack on the kitchen table and started rummaging in the refrigerator. Mushroom and cheese for Agatha. Curry and anchovies for him. He could spice it up with a little Tabasco.

He chopped up the onions and grated the cheese. As he was buttering the pan, he began to wonder about the letter. First, it was an actual, paper letter, which meant it was something official. Tom wondered if it weren't for charitable organizations, circulars and government mail if there would be a post office at all.

He poured down a layer of egg followed by a layer of cheese and the mushrooms. He sprinkled in the spices and waited for the underlying egg to firm up.

This morning Agatha had asked him about home schooling. Agatha always told him they had come to Absarokee so he could have a normal life. He would fit in here.

Tom folded over the omelet, then turned it. The smell of mushrooms and cheese filled the room.

It came to him that it was no accident an official note from the school would arrive the day Agatha had broached the subject of home schooling.

He grimaced as he separated the omelet from the pan and lifted it onto the plate. He poured in the mixed eggs and anchovies of the second omelet. It probably *was* Kurt Nokana. Somehow, he was going to have to manage this. Tom finished the second omelet and put it on a plate.

Well, the first step to controlling the situation was to find out what it was. He ripped open the envelope and pulled out the notice.

"Dennis Bott" was the head of the newly formed Absarokee School District Genetic Testing Service. Genetic testing of all students had been scheduled for next fall to coincide with the start date of the new Absarokee Health Service.

What did this have to do with Kurt Nokana?

The answer dawned on him: nothing.

He wasn't surprised at the testing—the school committee had been trying to get the local option passed for years. The sticking point had always been medical insurance. If that was taken care of, testing was sure to follow. Not that the subject was high on his list of interests. But you couldn't scratch a rock in this town without starting an argument on genetic and cosmetic engineering. Of course, being who he was, Tom might be considered biased.

Still, he couldn't shake the feeling Agatha's behavior and the notice were related. What could be so odd about his genetics Agatha would be scared of genetic testing? Illegal use of copyrighted genetic material? Unregistered clone markers? Did he have some chromosomal claim to the long vacant Russian throne? Tom grinned. He hoped so. He could use the money.

His grin faded. Agatha knew something. Something important enough to avoid genetic testing. He felt it in his bones.

He leaned against the table and looked at his hands, thinking. After a moment, he held his hands in the air, staring at them. Where do you hide a needle? Not in a haystack. You hide a needle among other needles. How do you hide a freak? Among other freaks. But all of the other freaks would pass a genetics test. Why wouldn't he?

He closed his hands. Stood for a full minute. The door closed quietly behind him as he left.

Now:

Alice stood on the porch, staring blindly into the woods. She felt tears on her face but she didn't understand why she was crying. What was the P'Chk to her? What was Bill or Tom or any of the others to her?

"It was civilization that saved us," came a voice behind her.

It was Tom. He stopped beside her. "If we'd been invented in the nineteenth century, we'd have been killed for sport—shot like the Tasmanians. But now human beings are civilized. Which means they grew something that resembles a conscience. So they let us live."

"What was so funny in there?"

"Best thing for the Israelis would be to settle all the conflicts over there once and for all. They've been fighting over that patch of ground for a century. Best thing for the Palestinians would be to hook their wagon to Israel's star—the country has more educated people per square mile than anywhere on earth. So what do they do when somebody pulls everything together? They shoot him dead." He looked at her. "You don't find that funny?"

"It's horrible."

"True enough, but so what? It's still funny."

Alice shook her head.

Tom shrugged. "Your dad was stubborn, too. Didn't like me at all for years. Then, one night, I went over to talk to him. It came to me that I had been completely wrong. I'd been challenging him all along without ever realizing it—pissing on him as if I were a tomcat." Tom stamped his cane down. "So I went over and heard him out. Took him a while to get started but he managed to call me every sort of abomination under the sun." Tom turned around and found the chair. He sat down slowly.

"What did you say?"

"I told him he was right." Tom settled himself down. "After all, they had killed us once, hadn't they? Humans had created this beautiful invention: the ability to subsume themselves into each other. We could never have done it. Oh, we can talk things out and figure out what to do, but humans together create an independent creature."

"A creature?" Alice stared at him. Horrible *and* crazy.

"Memes. Institutions. Cultural icons. Symbols. Call it what you like. God had to take a rib from Adam to make Eve and you've all been joined at the hip ever since. You all donate something from yourselves to the group—a little intelligence and some words—and these cultural *things* are created. I think the first one must have been religion. Something people could die for." Tom chuckled. "And something that drops average IQ about forty points. Pandit didn't negotiate between two countries. He negotiated between fifty, maybe sixty, memes, cultural icons, points of view. The only reason he could do it—the only reason *anyone* could do it—was because he couldn't partake of it."

"You told my dad all this?"

Tom laughed out loud. "Hell, no. We were only fourteen. I didn't figure this out for years. I said he was right and it wasn't my fault. I'd been born that way. But if he'd be patient and treat me just as if I were as good as anybody else, I'd do better. He agreed to take me under his wing." Tom snickered. "He stood right by me, too. Later, I introduced him to some people I met out there and he got a good job."

"You got my dad his job?"

Tom leaned toward her. "He doesn't know it. I'll be grateful if you never tell him."

He settled back in his chair. "Oh, I know you'll tell him eventually. But I'll be dead and he'll forgive me."

Tom fell silent. The crickets began chirping. Inside, Alice could hear voices. First, Frieda's strident bellowing followed by Sidney's deep, calm murmur.

"I hope you'll be a friend to Bill," Tom said, leaning forward on his cane. "He needs a friend out here."

Something in his voice caught Alice's attention. "Because he's all alone?"

"No. We're always alone. That never changes." Tom shook his head. "Because Sidney's going to be the next P'Chk. That's why I'm here."

"Did you know that man was going to get killed?" Alice stood up and turned to him.

"Of course not. Don't be silly. Pandit knew there was a risk. The successor is obvious. I came here to help things along in case something bad happened."

"Something bad did happen."

"That's why Bill's going to need a friend." Tom sighed. "I've got to go in there and see if I can't help Sidney with Frieda. After having a human wife, patching up the META negotiations ought to be easy."

Alice sat back down. A few moments later, Bill came out.

"You okay?" he asked from the doorway.

"Sure. Come and sit down."

"Yeah." He came over and sat heavily in the chair next to her. He sniffed the air. "Old Neanderthal smell. You never forget it."

Alice giggled, surprising herself.

Bill smiled at her. "Take your time. You'll get it."

Then:

Agatha was waiting for him when he got home. She was sitting at the kitchen table as he came in the door.

"Where have you been?" Her voice was a little shrill.

"Talking to Kurt Nokana," he said as he put his backpack onto the chair. "Decided I needed to patch that up if I was going to be home schooled."

Agatha didn't speak for a moment. "What do you mean?"

"I figured it out." He reached into the refrigerator and pulled out a can of tomato juice. "I'm not ready to go public so I'd better be ready to be home schooled for a while." He sipped the tomato juice. "How did you steal a piece of the ice maiden?"

"I was one of the investigators sent over to help the Swiss," she said quietly. "I stole an egg that first evening when everything was still chaotic. Then I froze it—I had to use the Hauptmann technique. It was dicey. Human eggs don't often survive freezing."

"Why did you do it?"

She stared at him levelly. "I didn't know then. I just knew I wanted it. Someday I would figure out what I wanted to do with it—study it. Clone it. It was a prize waiting to be taken."

"Then what?"

"Then I waited. The ice maiden ended up in the Swiss courts. After that, the Swiss were the only ones that had access."

"Why am I a boy? One X, get another X and you get a girl. The ice maiden didn't have any Y chromosomes."

"The Neanderthal Y was already mapped. I used a modified human Y as a starting point. It served."

"Why did you have me at all?"

"Look around you, Tom," she said softly. "Things are falling apart. People have every tool imaginable to save themselves and things are still falling apart. Everybody can see the problems right in front of them and things are *still* falling apart."

People are so smart they can find new and better ways to work around the awful things they've created and think they've solved the problem when they've never even touched it. But the world is just *fine*. *We're* the problem. I can't change human beings but I thought, maybe, I could give them a new point of view."

"Me," Tom said flatly.

Agatha smiled and reached over to take his hand. It was comforting. He looked at her. She was still the woman who'd raised him. As different as she appeared to him now, he could see the woman he knew underneath. He squeezed her hand back.

Let's see, he thought. The humans who killed us now need us to save them from themselves.

As Agatha stared at him, Tom started laughing. ○

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The author's next novel, *Diving Into the Wreck* (Pyr), will introduce some people to the riveting world of her Readers' Award winning novellas, "Diving Into the Wreck" (December 2005) and "The Room of Lost Souls" (April/May 2008), and give those already familiar with this milieu a thrilling update on what Boss will do next. Her brief new tale provides all of us with a disconcerting way to look at . . .

TURBULENCE

Kristine Kathryn Rusch

Fifteenth flight of the month and it was only the fourteenth day. Got on the 747, wasn't sure if he was leaving or arriving in Chicago. Had a momentary panic before he remembered he was going to Denver. Three meetings, a pitch he had been working on in more airports than he cared to count, and he still wasn't done. He had to figure out what he truly *believed* about the product, what it was he could sell. Can't sell anything if you can't convince yourself first.

But he was so tired. Couldn't remember when he last called the wife. Had she complained this trip or the one before? *We never talk any more.* Hell, he never talked to anyone any more.

First class was full and he couldn't upgrade. What good was 100K in frequent flier miles when people actually paid for first class tickets? He begged for an exit row over the wing, got it, and decided screw the pitch. What he really needed was sleep.

He had closed his eyes long before the gate attendant started boarding by rows. He was already dozing when someone tapped his shoulder. He opened one eye, expecting a stewardess—dammit, he'd never get that right, no matter how many miles—a flight attendant. Instead, a large woman (a fat woman) smiled apologetically at him. She couldn't fit into the row with his knees in the way.

He unbuckled, got out, wondered how in the hell she'd fit in the seat—he barely fit in the seat. She waggled in, then pulled up the armrest, settled against the window, and fought with the seat belt.

He didn't watch. He got back in, slid down, extended his legs in the measly "extra" leg room the exit row offered, and prepared to drop off when she spoke.

So close to sleep that he wasn't thinking. He said, "Hmm?" like he would with the wife, a sound which told her, in that infinitely private language of marriage, that he was nodding off, and she shouldn't press. But he wasn't married to the fat woman, and she repeated what she had said a moment ago.

He opened his eyes, blinked at her, trying not to look annoyed. That was his second mistake. He should have looked annoyed. She smiled at him, the Safety Information Card in her left hand, and said, "I'm not sure I can operate the door. Do you think they'll make me move?"

"Dunno," he said. "Better ask."

So she did. The stewardess—dammit, the flight attendant—oozed sympathy. "You'll have more room in this seat, honey, and I'm sure this nice gentleman will help you should anything go wrong."

This nice gentleman squinched his eyes, and pressed his lips together, wishing that the stewardess, damn political correctness, had followed the rules. He wasn't sure he'd be able to reach over his seatmate to get to the emergency door should he need to, nor did he think he could shove her through it.

But he smiled politely, folded his hands across his chest, and prepared to close his eyes, when the woman said, "I've never had a safe flight."

"Hmm?" he asked, then damned himself.

She leaned toward him. "Every time, something's gone wrong. The last time, something under the plane was making an awful knocking sound, and we had to make an unscheduled landing in Des Moines. The time before that, the fog in Chicago was so bad that they overshot the landing and we bounced—have you ever been on a big plane when it bounces?—and I swear you could hear everyone sucking in their breath—"

"His breath," he murmured.

"What?"

"Nothing." He made himself look at her. She still clutched the Safety Information Card. She looked scared. His empathy, which had been noticeably missing a few moments ago, was back. Everyone was scared these days, and he understood it. Although he couldn't remember how long it had been since he'd been scared—not counting those five days he'd been stranded in Canada, mid-September 2001, wondering if his world was going to end. But scared, really scared of plane flight, he couldn't remember that. It had to be that first trip, 800K ago, sitting on the runway in San Francisco, praying that he wouldn't die.

"Sounds like you fly a lot," he said.

"No," she said. "It's bad luck to have me on a plane. I try not to."

He'd heard this before. He'd heard everything before. "Why're you flying this time?"

"My sister is having an operation. I'm the only family. Someone has to take care of her son."

"Family emergencies." He nodded, trying to sound more sympathetic, but he had a momentary panic that he would spend the next three hours hearing the family's tale of woe. "Always hard."

"Yes," she said. "When my grandmother died. . . ."

He had a gift for tuning out even though he looked as if he were paying close attention. He would nod now and then, make eye contact, mmm-hmm softly. No one ever knew, *she* didn't know, he was thinking about the pitch, then remembering all the hundreds of bad flights he'd had: the time the oxygen masks had descended in Portland; panicked stewards running from the cockpit to their seats as a warning buzzer sounded just before that landing in Cleveland; the ice-slide at LaGuardia the day before that jetliner went into the ocean. *There but for the grace of God*, he had thought then. *There but for the grace of God*.

Yet he still retained the skill to put those moments out of his mind, knew that they were simply that. Moments.

She paid religious attention to the safety protocol at the beginning of the flight, interrupting her monologue for it. After they were airborne, she managed to talk non-stop. All near-disasters, frightening misses. The woman ahead of them turned once and shushed her, saying she was worrying the little old lady in the next seat, and that worked for five minutes.

But the monologue seemed to soothe the fat woman and he found himself wondering, as he stared into eyes that could have been green or gold or a weird shade of gray, whether anyone else had ever pretended to listen to her that long.

"You sure are nice," she said more than once, and he would smile reassuringly, wishing he knew of a graceful way to get himself out of the conversation. But he didn't, so he mm-hmmed and nodded, and almost didn't notice when she paused for breath, somewhere over Nebraska.

She frowned, held out a hand, and watched the flesh jiggle. He did too, mesmerized. "There," she said with authority. "It's coming. Better buckle up."

The seatbelt light came on then, and he was about to tell her he was always strapped in when the plane dropped, just dropped, like a kid would drop a marble, then it leveled as if it had hit the floor. People screamed, drinks flew, and the woman in the row in front of them slammed her head against the compartment above her. The smack was so loud that he felt a sympathy ache in his own head, and his breath caught in his throat.

The plane tilted dangerously left, and then righted itself, leaving passengers moaning and shaken, a spatter of blood on the compartment before him, the smell of urine, vomit, and gin in the air. Someone was sobbing. He was clutching the armrest on the aisle side, staring at the emergency exit, wondering if he could turn and pull and shove with the woman in the way.

She laughed shakily, gave him an apologetic smile, and said, "It's okay now."

He believed her. He didn't know why, but he did. A few minutes later, the seat-belt sign went off, and the stewardess came down the rows, checking, soothing, offering bandages and blankets. The woman who had shushed them had a cut on her skull, but insisted they didn't need to make an emergency landing for her. A doctor a few rows back was allowed to come up and concur. Some other passengers helped with the clean-up, and the plane was filled with nervous voices, voices he had heard in the sky only once before, voices most people saved for elevators that had momentarily stuck or just after a particularly close car wreck.

He was awake now, all of him, and it wasn't the sudden drop which had done it. The fat woman had awakened him with her monologue, her certainty, her uncanny and accurate knowledge that something had been about to go wrong.

She had reawakened the insidious voice he had put to sleep in San Francisco 800K ago, only its tune had changed ever so slightly.

How many times, it asked, does this happen? How many times do planes malfunction, people get hurt, near misses become real catastrophes like it has for the woman one seat ahead of you? If you hadn't been wearing your belt, that could have been you. There but for the Grace of God—

"Go I," he whispered.

"Hmm?" the woman next to him asked.

He shook his head. She closed her eyes, rested her hands on her ample stomach and dozed off. He watched her for the next hour, sleeping the sleep of the innocent, as if she and she alone knew that nothing more would happen to them. He knew that he should sleep too, now that the vomit and the urine and the gin smells had mingled with some kind of deodorizer, and the frightened voices had ceased.

But sleep eluded him, and when the plane bumped its way through the expected turbulence at Denver International, his fingers were digging holes in the armrests again. The plane eased to a stop—a perfect landing, he would have said if he had been calm—and he stood the moment the seat-belt light went off.

The woman woke then, and looked up at him.

"Sorry," she said.

She knew. She knew she had done what terrorists and bad landings and strange engine noise had not. She knew she had reawakened that insidious internal voice which even now was telling him that flight was not natural, that his life was not natural, that someday, somewhere, he would die.

He felt a surge of anger, knew it was useless, and forced himself to smile his most polite smile—his business smile, the one he'd worn for 800K, the one, perhaps, he might never wear again.

"It's all right," he said to her, and for the first time, the lie didn't sound convincing.

For the first time, he could no longer convince himself. ○

CALIFORNIA BURNING

Michael Blumlein

Michael Blumlein is the author of *The Movement of Mountains; X,Y; and The Healer*, as well as the award-winning story collection, *The Brains of Rats*. He is currently completing the first volume of a new trilogy. In addition to writing, the author practices and teaches medicine. You can visit him online at www.michaelblumlein.com. Michael's first story for *Asimov's* uncovers some of the poignant truths about parents that can only be stumbled upon once they are gone.

The guy at the crematorium said it would take about three hours. A little less if he was lean, a little more if he was fat, as fat burns slower. "Which is why it's so hard to get rid of," he added, patting his ample belly. He was a congenial man, of a different congeniality than the people at the mortuary, who were hushed, respectful, reserved, sedate, watchful, and preternaturally composed. The sort of people whose every mannerism and facial expression assured you it was perfectly all right to get emotional, to rend your clothes, pound your fists, sob till your throat was raw. They were all for showing your grief. And if you didn't, you felt a little embarrassed, as if you hadn't performed up to par. And if you did, you also felt embarrassed, for making such a fuss. The difference being that in the latter case you felt you'd done the right thing.

Greg, the crematorium guy, was not reserved at all. He was the opposite, chatty and matter of fact. Fat burned slower, he explained, because it had more calories than muscle. You could get it to burn faster by raising the temperature in the oven, but then you ran the risk of blackening the air with smoke and pollution, which were no-no's these days. They had a camera trained on the rooftop chimney that was hooked to a monitor to check what was coming out, which at the moment was nothing. Or rather, nothing worse than the air itself, which was hazy from a nearby fire. It was summer, and where I lived, summer meant fires. "Good day to be inside," he said.

There was a box in the room. *The box*, I should say. Six feet long, one foot high, it sat on a gurney, and without so much as a word of explanation or warning, Greg lifted the lid.

I was determined to be cool. But it didn't turn out that way. My stomach lurched, and I choked back emotion.

The box was plain and anonymous, but the bag inside was body shaped. My father's name was printed in large letters, once at the foot of the bag and once at the head. There was a tag with a number that Greg removed for me to check against the number on a form I had. I was shaken by the sight of the bag and so relieved that he hadn't opened it and asked me to identify the body that I barely gave the number a glance.

Dad's name was on the bag, not once but twice, and that was good enough for me. And even if by some fluke it was someone else, who would ever know? Ashes were ashes. A little more, weight-wise, if you were big, a little less if you were small. But quality-wise the same: a kind of gritty mixture of the soft ash of fully combusted flesh and organs combined with the coarse ash of bone. This according to Greg, who was free with the info. Gold and silver fillings that might identify a person vaporized, and personal prosthetic devices like knees and hips and artificial heart valves were confiscated as potentially biohazardous and not included in the remains. There was a stainless steel tray where the bones that hadn't crumbled completely in the heat were pulverized by hand, then fed, along with the rest, through a funnel-shaped sieve, rather like sifting flour to get a more homogeneous blend. Attached to the tray was a container half-filled with blackened metal prosthetic parts. Like jewelry, but scorched. Of everything I had seen so far, this was the most disturbing. Strange how the mind works.

I didn't flinch, for example, when he raised the door of the brick-lined oven and, again without a word, pushed my father in. I didn't flinch when the door snapped closed. And as the gas ignited with a soft hiss, I watched the temperature needle slowly rise without emotion. Perhaps it was this composure of mine that made Greg veer from normal procedure. Perhaps he admired me for it. Or maybe he thought that something was subtly wrong. At any rate, after the body was in the oven for a while, he opened the door. The cardboard coffin was on fire, somber red flames punctuated by bright curlicues of yellow. Centered almost exactly in the middle was the dark globe of my father's skull. He'd been bald in life, and I recognized the shape. It was him, and not only that, he seemed at peace. By which I mean it comforted me to think that. The flames appeared to be cradling him. They licked at his head but had not yet set it on fire, as though to honor him—his life, his achievements, his spirit—by not consuming him too fast.

I left the crematorium at 8 AM, called at one (allowing time for the ashes to cool) to pick up the remains. I was told to call back later. I called again at two, and then at three, and then four. Greg said it was taking longer than expected. I asked if there was a problem.

"Sometimes the ovens act up. Don't heat like they're supposed to."

"Which means what? That he can't be cremated?"

"Oh, he'll be cremated all right. It just takes longer."

"How much longer?"

"Why don't you call back in a few hours."

"Like when? Tonight?"

"No problem. We operate around the clock. Twenty-four/seven."

"You don't sleep?"

"Can't afford to. They don't."

In my mind's eye I saw a line of gray and expressionless men and women, waiting impassively to be slid in the oven and baked. It was a dreadful image. I wanted this to be over.

"Are you busy?" I asked.

"Most of the time we are. It's steady."

"I mean now."

"Now? Not too busy."

"Can you fix it?"

"Fix it?"

"The oven."

There was a pause, as if this was not exactly the right question. "Sure. We fix them all the time."

"So tonight then? I can pick them up tonight?"

"Right. Tonight. Call back. Everything'll be fine."

As it turned out, everything wasn't fine, not by nine that night, when the swing shift guy suggested I call back in the morning. And not by the morning.

I got Greg again, a guy whom, in the short time I'd known him, I'd come to more or less trust. He was straight with me, and not unfeeling.

"It's not the oven. Sorry, man."

"What do you mean?"

"My boss wants to talk to you."

"You talk to me. What do you mean, it's not the oven?"

"He'll explain."

"Just tell me."

There was silence.

"Please."

He was a decent guy. He cared about his job, and in this case his job meant caring for me.

My father, it seemed, did not want to burn. His skin and nails and organs, yes. They were gone. But his bones, no. Somehow they had resisted twenty-four hours of thirteen hundred degree heat and flame. Greg had never seen anything like it.

His boss, however, had. He'd been in the business more than twenty years and had seen, in his words, "a little bit of everything." We met in his office, which adjoined the crematorium. There was an old-fashioned oak desk piled with papers, a chair behind it and one in front of it, a dirty window, a concrete floor. By the look of things he wasn't used to visitors.

At another time I might have been interested in what he meant by "a little bit of everything." He was certainly interested in telling me, as though the existence of other unusual happenings and odd occurrences would be a comfort. Rather like expecting someone with a broken bone to be comforted by the news that other people were in pain.

I didn't want to hear about it. "What's the problem with my father's bones?"

He was leaning against the front edge of his desk, his shirt collar open, his thick, calloused hands on his thighs. He looked like he could have been a fighter at one time. His face was carefully composed.

"They don't want to burn," he said.

"And why is that?"

"I wish I had an answer. We gave it all we got."

"Greg mentioned something about the oven. Thought maybe it was acting up."

"Nothing wrong with the oven. We just had it serviced. It's working fine."

"But this is what you do, right? You cremate bodies."

"Twenty-nine years," he said.

"But not mine." I meant my father's, of course.

He rubbed his thighs, as if to clean his hands, or expel something. It reminded me of my father in his hospital bed, just a few days before he died. Picking at his gown over and over, at a thread or piece of lint or something that no one else could see, something that simply wasn't there, then tossing it over the side of the bed. I took his hand and held it, but he pulled it away, so I sat beside him and watched, transfixed and disturbed by what he was doing. There was no purpose to it. He wasn't himself. Or else he was (who else could he be?), and the purpose of this repetitive and disconcerting activity was hidden to me.

"I'm fully prepared to give you your money back," the man said.

"And then what?"

"You can use it to bury him."

"We don't want to bury him."

He didn't reply.

"No offense, but maybe we should try someone else."

"Sure. By all means. Do that."

"Wouldn't you?"

"I told you what I'd do," he said.

My father actually had suggested that when the time came, he be buried, but my mother was opposed. Her mind was set on cremation. She wanted to scatter his ashes and be done. She didn't want a grave to have to visit. Her mother and father, whom she adored, were buried in graves, and she didn't enjoy the feelings that visiting them stirred up in her. She didn't like being tied to her loved ones in that particular way. Ever the gentleman, my father had agreed.

"You said you'd seen this before."

He nodded. "One time. Six, seven years ago. We were using higher temperatures then. Didn't matter. Same thing."

"Man or woman?"

"Man."

"What did he die of?"

He didn't even have to think. "Heart attack. What did your dad die of?"

The strange thing was, no one knew. He went into the hospital complaining of shortness of breath and twelve days later he was dead. Having lost his mind completely—also for unknown reasons—in the process.

"Not his heart. His heart was fine. What did you do? The other time?"

"I called around. Talked to some guys in the business. Everyone had had a case or two. Or if they didn't, they knew of one."

"So this is not unheard of."

"No. It's not."

"It happens a lot?"

He shrugged. "It happens."

Knowing this, that we weren't alone, did, in fact, help. But only a little.

"So with the other one. The other body. What did you end up doing?"

"Same thing I'm doing now. Talking to you. Letting you know this is not the outcome we planned. Not the one we wanted. Trying to help you along."

"Did they have a burial? The other time?"

"Don't know. They didn't say what they were going to do. Like you, they were upset."

If my dad were alive, he would have been embarrassed at having caused a problem, embarrassed at being the center of attention, embarrassed at the fuss. If you told him he wasn't crematable, he wouldn't have asked why. He'd have said fine, do what you have to. Or rather, he would have said, don't upset your mother. Make it easy on her. Do whatever she wants.

"I'll have to talk to my mother."

"Of course."

I stood.

He said, "Can I get you to sign some papers before you go?"

He produced them, I signed them, he punched a number into his phone. He lifted the receiver and spoke into it briefly, and a minute later, Greg came through the door. He was carrying a plain cardboard box about the size of a crate of oranges. It had a fitted top and cut-outs for handles at either end. He placed it on the desk.

It took me a moment to understand what it contained.

"I packed them real good. Nice and snug. There shouldn't be any problem with shifting or rubbing or slippage." He stared at his feet, hesitating. "The top I wrapped separate. And I put it in a bag. Just in case, you know, you don't want to look at it."

"The top?"

His hand drifted up to his head.

Suddenly, I didn't feel so well. Weak in the knees, unsteady upstairs. Strangely, or maybe not so strangely, I wanted to throw up. Or cry. Or both (can a person do that?).

"I made an inventory, just so you know. It's on a piece of paper. In an envelope."

I was afraid to ask what he meant by "inventory."

His boss, however, felt obliged to explain. There were a lot of bones in the body. He didn't know how many, but a lot. And they weren't held together anymore, because whatever it was that held them was all burned up. The ashes—what there were of them, which wasn't much—were in a small plastic bag. The bones, none of them touching, were packed separately, according to shape and size, not to how they fit together naturally. So I might not recognize which was which, and unless I happened to know anatomy, which I didn't, I certainly wouldn't be able to say that all the bones were there, that the body was complete.

"Which is why we made the list."

I nodded, but I barely heard a word he said. I was thinking of my poor mother. I was thinking of my father's skull. I was also trembling. I felt like a little boy, being asked to be brave. My father, I sensed, was watching, not unsympathetically. He more than anyone would have understood. Inventory? You've got to be kidding. There was no way I was opening that box.

But I did have to take it. At first I put it beside me in the passenger seat, but after a block or two I moved it to the back. That was still too close, and a few blocks later, I put it in the trunk.

When it comes to disposing of a person's ashes, it seems that it's hard to go wrong. You can toss them to the wind, spread them around and dig them into the ground, charter a boat and scatter them at sea. You can do it as soon as you get them from the crematorium. You can wait a month, or a year, keeping them in an urn or a box, in private or in plain view on a shelf. You can keep them forever and never dispose of them at all. By some common decree, ashes are immune to misuse. Just about anything you do is acceptable.

But, aside from burying them or bequeathing them to science, what are you supposed to do with bones?

I put them in the living room, on a side table. My cat Chester made an exhaustive study of the box, seeing and smelling things, no doubt, far beyond my pale human senses. To me it looked gray and smelled like cardboard. The more I studied it, the more I should have stopped. For where Chester excelled in senses that were grounded in reality, I excelled in ones that were not. I fantasized, for example, that my father was alive and trapped inside. I fantasized he was a ghost. I fantasized he was troubled, restless, and was going to haunt me . . . not necessarily because he wanted to but because that's what people with unfinished business did.

This was not good. Not good at all. What was I going to tell my mother?

That was a Monday. The nearby fire, which was mostly brush, had been contained, but now there were other fires, and on Tuesday, the forest to the north of us went up in flame, filling the sky with billows of black smoke. It was the driest summer on record, and by Wednesday there were a hundred fires, and more igniting every hour. For mile after mile in every direction the air was thick and gray and nasty. People with respiratory conditions were advised to stay indoors, then that was amended to include everybody. I watched TV, transfixed by news of the fires, witness to something that seemed both terrifying and monumental, historic, apocalyptic, a turning point of some sort. Four hundred fires, eight hundred, a thousand, all up and down the state. "California Burning," the headlines read. My father's resistance to flame—his un-

burnability—seemed somehow part and parcel of this. Sphinx-like, inscrutable, the box sat on the side table as if daring me to understand. What was I to do?

The doorbell rang, and I nearly jumped. Two men were at the door. For an instant I feared that I was being evacuated. Like most people, I didn't want to go.

One was tall, the other stocky and broad. The tall one looked to be in his sixties; the stocky one, in his late thirties or so, a good ten years older than me. They were dressed conservatively in suits and ties.

They introduced themselves and said how sorry they were to hear of my father's death. I thanked them and asked how they knew him.

"We didn't know him personally," the older one, Michaels, said.

"Felt like we did," said the other one, whose name was Neal. "It was nice what they said in the paper. Good man."

"Exceptional," said Michaels. "Outstanding. I wish I had known him. A fine man all around."

The younger one, Neal, handed me a card. "We were wondering if we could have a minute of your time."

I looked at it, then him. "Bereavement counselor?"

He frowned. His buddy Michaels snatched the card out of my hand, read it, then narrowed his eyes.

"Wrong card," he told Neal, who stammered something and blushed. "He's only been doing this a little while," he explained to me, returning the card to Neal, who pocketed it, fished out his wallet and withdrew another one. After a moment's hesitation he offered it to me, but Michaels took it first. He examined it, gave a little nod, looked me in the eye in a friendly sort of way, and passed it on. This one read "Department of Public Health."

"Which one are you?" I asked.

"We're health officers," said Michaels. "We received a notice of an irregularity. We're following up."

"Strictly routine," said Neal. "Nothing to worry about."

Michaels seemed to tense slightly. "Larry. Why would he worry?"

"He wouldn't. Like I said . . ."

"We know it's a difficult time," said Michaels, cutting him off, "but we'd like to ask you a few questions. Do you have a minute? It won't take long."

"Is there a problem?"

"No problem."

"None at all," added Neal. "Routine visit. We'll be gone before you know it."

The two of them stood there for a while, not looming exactly, but not going away. At length Michaels said, "May we come in?"

There is something gravitational about authority, compelling in an almost physical way. Without thinking, you find yourself drawn to it. And you want to be, that's the thing. You like the feeling. You want a piece of the action, whether or not you believe in it or plan to obey.

I opened the door wider. Then I remembered the box.

"Hold on a minute." I hurried to the living room, picked it up and carried it to my bedroom. But the bedroom seemed too obvious, which was a strange thought to have, unless, like me, the only thing stronger than your trust in authority is your distrust of it. My apartment is small, and room-wise, all that was left was the kitchen. The box didn't fit in the oven, and hastily, I stowed it under the sink.

"Something cooking?" Michaels asked when I returned.

"Cooking?"

He motioned toward the kitchen. I was caught off-guard.

"You guys want coffee?" I asked.

They didn't, and I ushered them into the living room. We all sat down, and under Michaels' watchful eye, Neal began.

"Again, our condolences."

"Thank you."

"We understand your father passed away unexpectedly. And rather fast."

For some reason that irked me. "He was twelve days in the hospital and eighty-three years old. Is that fast?"

"And of unknown causes."

"Like I said, he was eighty-three."

"But not especially sick before he went into the hospital. Say a day or two before."

"No. Not especially."

He nodded in a knowing sort of way, then cleared his throat. "Forgive me for asking, but did you consider doing an autopsy?"

"No. I didn't."

"Any particular reason why not?"

In fact, the thought had crossed my mind, but only briefly. He was eighty-three, after all.

"I didn't see how it would have helped."

"How about your mother? Was she interested?"

I thought of her expression the day she came in and he didn't recognize her, or anyone, the day he became delirious. How her face had crumpled, and her eyes had teared up, and she couldn't speak, except in little sobs. And how after a minute she gathered herself and sat beside him, taking his hand in hers and speaking to him in a calm, reassuring, almost chatty, voice, reminding him who and where he was, affectionately chiding him for not knowing. The eleven days between his entering the hospital and his dying were for me a blur, but for my mother, I think, it was the opposite: time slowed to a crawl. She was not shocked or surprised when he died; she was relieved more than anything, both for his sake and hers. She had known him for more than forty years, and no autopsy would have enabled her to know him any better, or changed how she felt.

"No. She wasn't. Not at all."

"Interesting."

"Why is that interesting?"

Michaels was quick to reply. "What Mr. Neal means is, you can understand our interest. From a public health standpoint. Rapid death. Unknown cause."

"There is a cause. The cause was old age."

He regarded me for a few seconds, then inclined his head. "It gets the best of us. Why don't we leave it at that."

"I do have another question," said Neal.

I was beginning to grow impatient. Neal especially was getting on my nerves.

"What is it?"

"It has to do with his bones."

"What about them?"

"We understand there was a problem."

"Is that right?"

He nodded.

"Word gets around."

Michaels, probably sensing the tension, intervened. "Again, it's a regulatory matter. The crematorium is required to inform us of any unusual occurrence."

I replied that it wasn't that unusual. It had happened before.

"Has it?"

"That's what the man said. Not often. But then my father didn't always do things the conventional way."

It was a light-hearted comment. I meant nothing by it, and Michaels let it slide. But Neal was the sort who saw meaning and motive everywhere.

"How so?"

"I was joking."

He frowned, then gave a bogus laugh. "Oh. I see. Hah. You mean your father *was* conventional?"

"Sometimes. Sometimes not."

"He was unpredictable?"

"I wouldn't say that."

"In the end. How would you describe him then?"

"He was delirious."

"Yes. That's what the hospital notes say."

"He wasn't himself?"

"Did he talk to you?"

"He was babbling."

"About?"

"Nothing. It was nonsense."

"Could you understand it?"

"Sometimes. Most of the time not."

He wasn't satisfied with this. "Could you be more specific? You couldn't understand the words? Or the words were put together in a way you didn't understand?"

"I don't know. Both, I suppose."

He exchanged a look with Michaels. "Can you remember any of them? The words."

"Not really."

"Did you recognize any? Had he said them before?"

"Some of them. Sure."

"The ones you didn't know."

"What's this have to do with his bones?"

"Bear with us for just a moment," said Michaels. "We're almost done. Did any of the words sound foreign?"

"I don't remember. He mumbled a lot."

"Had he ever acted that way before?"

"No. Never."

"He never behaved unusually? Like, say, someone you didn't know?"

"A stranger," said Neal. "Did you ever think of your father like that?"

I'd had enough, especially of him. "Do you have a father?"

"Is that a yes or a no?"

"It's a question. If you don't know the answer, maybe I can help."

"Let's get back to his bones," said Michaels. "We'd like to have a look at them."

"Would you? And why is that?"

"Because we're public health officials."

"And it's the law," said Neal, although the look he got from Michaels made me wonder if he'd made that up.

"Why are you so interested? Is there some danger to the public? Some sort of health risk?"

"We won't know until we examine them."

"But what's the likelihood? Really?"

"I couldn't say."

I suspected he could. Moreover, I began to feel the need to defend my father, as though his honor and integrity were at stake. Which was ironic, because of all his qualities these were the ones that he, and I, and nearly everyone who knew him, valued most.

"They've cooked for a whole day at more than a thousand degrees. Is there anything you know of that survives that kind of heat for that long? Anything that could possibly harm anybody?"

There was a pause. Somehow the word "harm" changed the whole tenor of the conversation. Neal glanced at Michaels, who wore a grave expression, then at me.

"If you don't mind, we'd like a look."

"They're not here."

"Where are they?"

With nary a moment of hesitation I came up with a brilliant riposte. "Somewhere else."

Neal started to reply, but Michaels stopped him.

"Can you arrange for us to see them?" he asked.

"When?"

"Tomorrow, say."

I was out of snappy rejoinders. "Tomorrow it is."

"Excellent. We'll see you in the morning."

What is it about health officials that leaves you feeling anxious, worried, vulnerable, agoraphobic, headachy, sick to your stomach, tight in the chest, sweaty, itchy, and insecure? Bacteria in the food supply, pesticides in the water supply, smoke in the air supply, obesity, cigarettes, heart disease, ADD, depression . . . it's a dangerous world out there, hazards everywhere, and these functionaries seem to delight in reminding us of this, bludgeoning us with statistics and sharing, if not manufacturing, the most alarming trends. But how bad really is it? The people I see look like people I've seen all my life, only more of them, and, I have to say, on the whole they look better. Take my father, for example. He used to smoke, like nearly everyone his age, then he stopped. Then he got fat, like ex-smokers do, then he got rid of the fat. He looked good when he was seventy, he looked good when he was eighty, and he looked pretty darn good for an eighty-three-year-old, all the way up to the last two weeks of his life. A stranger? Yes, he was, in those final few days. And before? Who isn't a stranger to some degree, even to his closest companions? I knew my father as a son, but what did I know of him as a husband, or a friend, or a son himself? What secrets did he have? And what thoughts and experiences that weren't secrets at all, merely too pedestrian and numerous to mention, or too far in the past, too dim, to remember? Of course he was a stranger. On some level, we're all strangers to each other. But I feared those men meant something more.

After they left and I calmed down, I called my mother. Some friends were making a condolence call, so she couldn't talk long. She asked how I was doing, which is how she starts every conversation, and I told her everything was fine.

"How about you? How are you?"

"Everyone's being very nice," she said.

"Are you sleeping?"

"Not too bad. I'm not eating much. I don't have much of an appetite." There was a pause. "Why is that?"

She sounded puzzled, as if she'd never known anyone who'd lost a loved one and heard them describe what it was like: the loss of appetite, the sleepless nights, the sudden and recurrent shock of being alone. In fact, she had paid countless condolence calls of her own and had many widowed friends.

"Because your husband just died. People lose their appetite. It's pretty normal."

"So I shouldn't worry?"

"Are you eating anything at all?"

"Some soup. I had a piece of toast."

"Then no. You shouldn't. You'll be fine."

"But everybody's bringing things. Chicken salad. Meatloaf. Lasagna. The food's just piling up."

"But you like those things."

"I'm not hungry. But they keep bringing them anyway."

"You'll be hungry later. You can freeze them."

"I'm not helpless. I can cook for myself."

"You might not feel like cooking."

I could see the look on her face. "It's annoying. Just so you know. I didn't die. Your father did."

Grieving, for my mother, was a relatively new condition, but being aggrieved was not. The latter for her was sometimes an expression of discontent but more often of worry, which itself was an expression of fear. What she feared most was losing something: her independence, her self-control, someone she loved. In this case, she had lost all those things to one degree or another, and I did my best to reassure her. We made a date to see each other the next day, and I hung up, relieved, temporarily, to have avoided the subject of my father.

The fire situation worsened that afternoon. At one point there were a reported fourteen hundred blazes throughout the state. One would get contained, and a score of others would take its place. Forests were being consumed, homes destroyed, thousands upon thousands of firefighters mobilized, countless lives imperiled. The closest blaze to us was a scant twenty miles away, and the air outside my window had to be the epicenter of the smoke. I could barely see across the street. The sun was a blur, and the light was brown and eerie.

This is how the world will end, I thought. Maybe it's ending now. Not with a bang but in a slow, deepening, sunless shadow.

I stayed inside and watched the news. I made some calls. I searched the Internet on the subject of bones: bone conditions, bone diseases, skeletons, burials, decomposition, cremation. I learned that in acromegaly the bones are unusually thick. And in something called osteogenesis imperfecta, unusually thin and fragile. I learned that the monks of a certain Catholic sect in Rome collected the bones of their brethren and made sculptures out of them. I learned many fascinating facts, but nothing that helped me in the matter of my father.

His bones were still under the kitchen sink, an ignoble hiding place, but the living room was too exposed, and, call me squeamish, I did not want them in the bedroom. So I left them where they were and said good night, paused, then said "I'm sorry about this, Dad," paused again, then said "I miss you, Dad," turned, turned back and said "I love you, Dad," then went to bed.

In the morning there were ashes everywhere: on the trees, on the cars, in the street. There was barely a county in the state that wasn't on fire. The governor had declared a state of emergency. The president, bless his heart, sent condolences.

I had decided, for the time being, to leave my father's remains where they were. My mother, of course, had to be told, and I was thinking about that when the doorbell rang.

It was Neal and Michaels again. I was nonplussed. I had called and left a message to change our date the night before.

"Didn't you get it?" I asked.

They frowned and looked at each other.

"Did you get a message?" Michaels asked Neal.

Neal shook his head. "Did you?"

Michaels shook his. "This is a bad time? It's inconvenient?"

"Yes. It is."

"I'm sorry." And he looked it.

A moment passed.

"When did you leave it?" he asked.

"Leave it?"

"The message."

"Last night."

"What number?"

The air was burning my eyes. By the looks of things, theirs too. Common courtesy obliged me to invite them inside, which I did.

"I don't know. The number you gave me. The one on the card."

"That's funny," said Neal.

Michaels agreed. "Maybe you punched it in wrong."

"I've done that," said Neal. "Plenty of times."

"It's not as easy as it looks. Those little pads. Those tiny little phones."

"It's not easy at all. Anyone can make a mistake. Don't worry about it."

"Not for a second. Please. Do me that favor."

"It's not worth the trouble."

"That's what I'm saying. Stuff happens." He glanced at Neal. "Am I right?"

Neal rolled his eyes. "You got to be kidding. All the time."

"Like yesterday."

Neal gave a nod. "Yesterday's a case in point."

"You probably thought we were stringing you along."

"Lying to you."

"Lying's strong, Larry."

"Misinforming you then. Not laying our cards on the table. Maybe you thought that."

"You didn't trust us."

"You weren't sure who we were or what to do. You suffered a tragedy. You're trying to sort things out. You've got a lot on your mind. A lot of feelings. Some this way, some that."

"You didn't trust yourself," said Michaels.

"You had the bones, but you didn't want to tell us. You thought it was disrespectful to your dad."

"You weren't sure what to think. You wanted to help, but you didn't want to do the wrong thing."

"That's exactly right." Neal pointed a finger at Michaels, as if to single out his razor-sharp intellect. "You hit the nail on the head, Mike. He wanted to help, just like he wants to help now." He turned the finger on me. "He wants to help, but he doesn't want to make a mistake. Doesn't want to blow it. Like before."

"With the phone. The wrong number."

"The phone, the information, the car, whatever."

"What about the car?" I asked.

He gave me a look.

"The car," I repeated. "What's wrong with it?"

He transferred his look to Michaels.

"He's asking about the car," said Michaels.

"What about it?"

Michaels shrugged and turned to me. "What's the deal? Is something wrong?"

"You said car."

He frowned. "No, sir. I did not."

"He did." I pointed at Neal.

Michaels turned to him. "He said it was you."

Neal looked thoughtful. "Interesting."

"Maybe he didn't hear you right."

"It's possible. Mistakes happen." He addressed me. "Can you hear me now?"

"I heard you before."

"Say it. What you thought you heard. The word."

I was annoyed. This was ridiculous. "Car."

"Not this?" He made a sort of gurgling in his throat, very brief and, I have to say, weird. Like water running over rocks, where sometimes you think you can almost make out words.

"Larry, behave."

"Familiar?" he asked.

I felt like it should have been, but I shook my head.

He looked disappointed.

Michaels intervened. "Maybe you said cart. Or Carl."

"Who's Carl?" asked Neal.

"Or card. Maybe card."

He scratched his head. "Coulda been that. Come to think of it, I was thinking about a card."

He reached in his pocket, pulled out his wallet and slid a card out. He handed it to Michaels, who glanced at it before giving it to me. "Now please, don't take this the wrong way."

Advice, naturally, that ensures you will.

I looked at it, and my heart froze.

Embossed on it, in large, no-nonsense, steel blue letters were the three initials no one ever wants to see. Who among us is not guilty of something?

The two of them watched me, waiting, it seemed, for some reaction.

"You look worried," said Neal.

Michaels nodded. "He does. I think he's taking it the wrong way."

"You said not to."

"I did. But obviously we're not communicating well. Do *you* understand me?"

"Sure."

"I don't talk with an accent?"

Neal grinned. "Not to me."

"And the words, they're clear?"

"Like crystal."

"But still there's a fundamental problem. Like a dog talking to a cat. Like different languages."

"But related."

"Definitely related."

Neal nodded. "It happens. Between people. Communication difficulties."

"All the time," said Michaels, taking the card from me and tearing it in half. "It's just a card, for chrissake. Anyone can make a card. What you should be looking at is the deliverer. Look at me."

I did, and what I saw was not what I expected. His eyes held a depth I hadn't seen before. They were warm, and, dare I say it, friendly.

I was almost taken in. "You want me to trust you? Is that it?"

"Sure I do. Who doesn't want that?"

"Good cop, bad cop."

He looked chagrined. "Larry's not bad."

I gave Larry a glance. "He's not exactly reassuring."

"Vive la difference. And we're not cops."

"Excuse me. Federal agents."

"You have a suspicious mind, my friend."

"You make me suspicious. With all your questions and innuendoes. And your stupid cards."

He considered this for a moment. "The cards, perhaps, were a mistake. I apologize." I nodded at the one he held in his hand, torn in half like a losing lottery ticket. "How do you expect a person to react to that?"

"It's a problem, I admit."

"Those letters . . ."

"We should change them," said Neal.

Michaels agreed. "We should. They're not what you think."

Neal said something in a rapid, fluty voice, like birdsong.

"That's how it sounds in the native tongue," said Michaels. "Or how we think it did. It translates roughly into 'Friends of our Deceased.'"

The "F" was right, but the "O's" and the "D" were nowhere on the card. "You're pulling my leg."

He shook his head. "We're not."

"Friends of our Deceased."

"F-O-O-D," said Neal. "Maybe we should put that."

And I thought, are you dumb or something?

Neal smiled at me. "Pretty dumb idea, huh?"

I stared at him. "What native tongue?"

Michaels said a word I hadn't heard. "It's more or less extinct."

"What the hell is it? Friends of our Deceased?"

He rattled off some names, two or three I recognized as friends or acquaintances of my father.

"It's a group?"

He thought for a second. "Sure. A group. You could call it that."

"What do you do?"

"Why, this." He gestured, as though it were obvious.

"What?"

"Visit people."

"You visit people."

"Sure. And talk to them. Help out."

"That's it?"

"We do other stuff too."

"Like what?"

He looked apologetic. "We don't usually talk about that with outsiders."

"So it's a secret group."

"Not secret. Private."

"And my dad was a member."

He seemed to understand how this might be troubling to me. "I'm sure he was a member of other groups, too," he said gently.

This was true. He was a member of a number of groups. And maybe some, like this one, I didn't know about.

"So you're here on behalf of this group. To help me."

"That's right."

"Fair enough. So tell me this: how is it going to help me for you to see my father's bones?"

He hesitated. "We can help you decide what to do with them," he said at length.

"Do you have a way to cremate him?"

"No. We don't."

"Then I don't think you can."

He protested, as did Neal, and repeated their request to see the bones.

I had this to say: "The message I left. The one you didn't get? To change our meeting today? Maybe it was a bad connection. You didn't hear it right. The words were garbled. Maybe you didn't understand." I paused, expressing my regret. "I'm so sorry."

"You're not."

"If you give me a number—maybe one that's more reliable—I'll call you if anything new comes up."

More protests, but I was done. Neal didn't take it well. He issued various veiled and not so veiled threats, but he had no power, as it turned out, legal or otherwise, to back them up. Michaels was more resigned, as though he half expected this. He handed me a new card, this one with his name on it. He lingered a moment, then suddenly and without warning reached out and gave me a hug. He said my father would be proud of me. He said to call if I changed my mind. Then he and Neal left.

I saw my mother later that day. She lived on the other side of town. Ash was in the air and on the ground, floating like snowflakes and stirring around my feet like dust. The heat and smoke were insane. Traffic was light, proving that people can, if they put their hearts and minds and souls to it, use common sense. I would have liked to use common sense too, but mom and I had some things to discuss, and the phone just wouldn't cut it. This had to be face to face.

She had made iced tea, a drink best taken outside, but we stayed in the kitchen. She wore shorts and a blouse and no makeup. Her cheeks were naturally pink, her eyes naturally large and dark, her face unnaturally drawn. The first order of business, to show that the world had not come to a halt with her husband's death and that she was okay, was to complain about her hair. This she did more by gesture than by word, grabbing it, scowling, looking annoyed and exasperated, shaking her head. She hadn't been to the hairdresser since the week before he died. Initially, she hadn't wanted to, and then it didn't seem proper.

"It looks fine," I told her, for which I received a look that said "Are you an imbecile? Who raised you because I know it couldn't have been me."

"I made an appointment for Saturday. Do you think that's all right?"

"Sure."

"Really?"

"Mom. You're the widow. You get to do what you want."

"I don't want to offend anyone."

She did have the power to offend, typically with her tongue, and usually without meaning to, or even knowing. But maybe now that dad was gone and she was alone, things would be different. The fact that she was concerned enough to mention it was a positive sign.

"Look how much you'll offend people if you don't get it done," I pointed out.

"Really? It looks that bad?"

"It looks fine. You have beautiful hair." And she did, salt and pepper and sry, at the grand old age of seventy. I felt a wave of affection for her and planted a kiss on her head.

"How are you?" she asked, relaxing a little.

I mentioned the fires, which she hadn't been following. News and current events were not at the forefront of her mind.

"How awful," she said. "Are you okay?"

"So far." It was a thoughtless reply, and I regretted it instantly. "I'm fine."

"Your father would have left."

"They're not advising us to. Not yet."

"There was a big fire here . . . god, it must have been nearly thirty years ago. You were a baby. They weren't telling us to leave then either, but he packed us all up and took us to a motel."

Playing it safe . . . this sounded like Dad.

"Once we were settled in and he was sure we were okay, he drove back and helped fight it."

"You're kidding?"

"I'm not."

"Dad did that?"

She nodded, and her eyes shone. "Your father was full of surprises."

"What else?"

"I don't know. Whatever they do. Hosed things down. Dug things out. He came back and got us in a couple of days."

"I mean other surprises. What other ones?"

"Oh, that." She thought for a moment. "A surprise birthday party for me. A surprise vacation. He loved planning surprises. And keeping them to himself. He prided himself on that, and with good reason. I can't remember a time he gave a secret away."

She paused, smiling at something.

"What?" I asked.

"Oh, I was thinking about you. You were another surprise your father gave me. Completely unexpected. I was forty-two. Who would have thought? But what a gift. Really. What a miracle. The best ever."

The memory of it lingered on her face. Tenderly, she asked if she could fix me something to eat. I wasn't hungry, but she opened the refrigerator anyway. Within seconds, she was scowling.

"Why do they keep bringing me things? It's such a waste. All this food. I wish they'd stop."

"Mom. Come sit. I have something to tell you."

Her face became utterly still. "What's the matter? What's wrong?"

I coaxed her beside me, then told her about the remains. She was puzzled at first, as if she didn't understand what I was saying. I had to tell her again, then test her further with the small detail that no one had an explanation. She wasn't happy with the news—who could be happy—but, leave it to her, she wasn't derailed.

"Call someone else," she said.

"I did. They won't take him. Not the way he is."

"What does that mean?"

It meant that word had gotten around. That no one thought they could do any better. No one had offered to try.

"It means I want to talk to you about alternatives."

She folded her arms and pressed her lips together, girding herself.

"I want you to consider burying him."

In the past two weeks she had lost weight. There were hollows at her temples and in her cheeks, making her eyes, which were large to begin with, more striking than ever. And those eyes regarded me, and it was a wonder I didn't turn to stone.

"Just consider it. Not necessarily do it. But think about it."

"No, thank you."

"Why not?"

"We discussed it already. I don't want your father somewhere in the ground. I don't like it. I've never liked it. Okay?"

"Things have changed. We have to change too."

"Not in this."

"Mom. Please. Be reasonable."

She looked at me, and slowly her face softened, and I felt the change that every child feels, or longs to feel, and maybe sometimes fears to feel, as her attention shifted from herself to me and her motherliness took center stage.

"You're upset. I'm so sorry, sweetheart. I wish there were something I could do."

"You're not upset?"

"It's your father," she said, as if this explained everything.

"Is it?"

"He can be difficult. You know that. And stubborn. Lord, I never met a man so stubborn."

And I thought, was that what this was? A character trait?

"I learned long ago not to argue with him. It only makes things worse."

"So what do you suggest we do?"

"Explain to me again why they can't . . . why he won't . . ." She couldn't quite finish the sentence.

"No one could tell me. No one knew."

"Well, maybe we should find someone who does. A bone specialist."

"A doctor?"

"Why not?"

Coming from her, this was a remarkable—really, an extraordinary—suggestion. The woman had a lifelong distrust of the medical profession, rivaled only by her defecation of it. And sure enough, a moment later she reconsidered.

"Well, some kind of expert." She paused to think. "Maybe Adolph."

"Adolph?"

"You know Adolph."

"Adolph Krantz?"

"Why not? He went to college. He studied chemistry. He's a smart man. And he was very fond of your father."

I hadn't seen Adolph since I was a boy. He was one of my father's oldest friends. I didn't see how he could help, but if my mother thought he might, it was worth a try.

"If I talk to him, will you listen to what he has to say? Will you take his advice, even if it's different from what you think? From what your mind is set on?"

"He wrote a very sweet note."

"Will you?"

"He'll get a kick out of seeing you."

"Mom."

"You're pestering me."

"Will you listen to him?"

She didn't say no, I'll give her that. "Talk to him. Let's see what he says."

There was one more item, which was apt to upset her, though with Mom you never knew. The smallest thing could cause the biggest reaction, and the biggest, she could take in stride. As it turned out, she didn't know either of the men, nor the group that they claimed to be members of. But she wasn't particularly alarmed or surprised that they knew my dad. He and she shared many of the same beliefs and memberships, but not all. And in the interest of marital peace and harmony, some things were strictly off limits.

I asked if my dad ever seemed strange to her.

She laughed. "Your father? Very odd. But you get used to it. Look, we were married forty-three years."

"How?"

"How what?"

"Was he odd."

"You knew your father. He had his way of doing things. It wasn't my way. Which, as you know, is perfect."

"Did he ever seem different from other people?"

She gave me a look. "You ask the weirdest questions. Of course he was different. Everybody's different."

"I mean different from normal. Different in some other way."

The look narrowed. "What are you driving at?"

"I'm not sure."

"Then let me tell you something. Your father was an exceptional man. He had his quirks . . . who doesn't? But when it counted, he was always there. For both of us. If you have any doubts about that, my advice to you is, don't."

I didn't have doubts, not about that, and for her the conversation was over. I had some food, which always made her happy, agreed to take some home, which made her even happier, kissed her goodbye and left.

The men visited me once more, this time in a dream. They were dressed the same, but they looked different. Their faces were rubbery and their arms and legs were long and loose. They moved like seaweed underwater, like eels, like smoke. I couldn't take my eyes off them . . . I think maybe they were hypnotizing me. I wanted to be with them, but they were underwater and I couldn't breathe. I tried to go after them, but I could hardly move. And my chest was starting to hurt. I opened my mouth, but I couldn't get any air. I tried and tried, but something was blocking my windpipe. The men were watching, and I was suffocating. My chest was ready to burst. Which is how it must have felt to my father the night he was hospitalized. He couldn't breathe either. It's a terrifying feeling. Thank god, I awoke.

The person who invents the twistless, tangleless, knotless sheet will be enshrined in the Sleepless Hall of Fame. Along with the one who invents the sweatless, soakless, self-cleaning pajamas. What did this dream mean? Aside from the fact that I was afraid to go back to sleep. That these men were not what they seemed? No surprise there. That I felt threatened by them? I did feel threatened. My heart was racing. But why?

Eventually, I did get back to sleep, a very light and fitful one, as I tried to strike that hopeless balance between vigilance and repose. I woke tired and grumpy, with the sense that something had to be done and the desire that someone would do it for me. After a strong cup of coffee, I was ready to take action myself.

I hadn't seen Adolph Krantz since I was a child, and I'd never been to his home. He lived outside a small town a couple of hours north of me in an old ranch house in a quiet neighborhood of parched fields and beautiful, stately oaks. The air was dry and caustic with smoke when I arrived. A cinder, or even the thought of a cinder, and the house, and everything near it, would be toast.

I parked at the curb, passed through a chain link gate and up a cracked concrete path to the front door. I rang the bell. After a minute I rang it again, and at length the door opened.

An old man peered out. Day old whiskers, hawk-shaped nose, boxy black-rimmed glasses that magnified his eyes two or three-fold, a flurry of white hair.

I gave him my name.

A moment passed, and then he offered his hand. "I'm Krantz. Call me Adolph. I was sorry to hear about your dad. Come in."

He led me inside, moving slowly but steadily, down a hall and into a small, paneled room full of books and odds and ends. There were two leather armchairs facing each other across a chess board. Only a few pieces remained in play.

He took one of the chairs. "Do you play?"

"I know how the pieces move. That's about it."

He studied the board for a moment, then leaned forward and advanced one of the

pawns. "Your father never liked the game. Though he'd play if I asked him to, back in the day. He hated this part. Endgame. Too slow for him. Not enough action."

He pointed to a pawn on my side of the table and asked me to move it. He studied the board a minute or two more, and, satisfied, sat back and studied me.

"You look like your father. You have his eyes. People used to say I looked like him too. To me that was a great compliment. I admired him enormously. There're not a lot of us left."

"Us?"

"That's right. Hardly any."

"What do you mean 'us'?"

"The gang. The tribe." He paused. "What did we call ourselves?" He couldn't remember.

"FOOD?" I ventured.

"What about it?"

"Was that the name?"

He gave me a look. "Food?"

I nodded.

"What kind of name is that?"

I told him what it stood for, at which point, I believe, he ceased to take me seriously.

"You're needling me."

"I'm not."

"Your dad used to needle."

"I'm only telling you what they said."

"Such a needler. The King of Needling. The Needlemeister. What an education, watching him work. A thing of beauty, your father. He had the softest touch." He fell silent, and I could see him remembering. The years seemed to melt away. A smile lit his old, craggy face.

"We did pretty well for ourselves, didn't we, Mickey? Considering what we had to work with. Where we came from. What we had to do. Pretty damned well."

Mickey was my father's nickname, from the old days. Only a handful of people used it. Evidently, Adolph was talking to him.

"We've got nothing to be ashamed of. You a high school dropout. Me a college bum."

"Adolph?"

He glanced at me.

"Mickey's not here."

He looked lost, but only for a moment. "Why would he be? But you. Listen. Be proud of your father. He was a good man. A wonderful person. You know how we met? The story. You know the story?"

Some of it I did, but only bits and pieces, mostly from my mom. Dad didn't talk much about the past.

"I came over when I was just a kid. Your father was a year or two older and already here. My family took a room in a house in the neighborhood. Five of us in a single room. I didn't know anybody. I didn't speak the language. I didn't know my way from a hole in the ground. Scared? You bet I was scared. Excited too. Scared and excited at the same time. Everything was so different, so strange and wrong, and one day I walked out the door, and there was your father. He was sitting on a fire hydrant, playing with a piece of string. He smiled when he saw me. 'I've been waiting for you,' he said."

"He spoke your language? He spoke German?"

"Your father? German? Never. Not a word."

"So how'd you understand him?"

"How do you think I understood him? He made himself understood. He took me

under his wing. Became a big brother to me. That's how they worked it. The buddy system. Everything in pairs."

"Who worked it?"

"The ones who sent us. The program. For me, mandatory. Your dad, if I'm not mistaken, was a volunteer."

"For what? A volunteer for what?"

He thought for a moment, and a smile spread across his face. "The rest of his life. And then some. That's for what. Don't ask me how long, because I can't tell you. As you see, I'm still here."

Apparently, he found this amusing. To me it was annoyingly obtuse.

"You said you were sent. By whom?"

"The senders."

"Who are the senders?"

"I was five. What does a kid know when he's five?" He gave me a look. "Your father never talked to you about this?"

"No."

"Never?"

I shook my head.

"Then I assume he didn't want you to know."

"Know what?"

"Some do, some don't. Tell people. It's an individual decision. It's not up to me to decide otherwise. Out of respect for your father, may he rest in peace. Out of respect for your mother. And for you."

This wasn't good enough, not by a long shot. I asked him again what it was I didn't know, but he refused to say another word. I wasn't about to get down on my knees. Not literally. I did, however, let a certain plaintive, importuning tone enter my voice. But he wouldn't budge.

So I tried a different tactic. "The men who visited me. Are they part of this thing? Do they know?"

He didn't recognize either of their names, but my description of Michaels seemed to ring a bell.

"They came to pay their respects?"

"They wanted a look at him. At his bones. Who are they, Adolph?"

"I'd imagine another unit. Another pair. Did you let them see?"

"No. I didn't trust them."

"They were secretive?"

"Extremely."

"And you found that annoying. Distasteful. Unpleasant."

"Yes."

He nodded, then fell silent. Nearly a minute passed before he spoke. "I understand. I do. But imagine for a moment if they weren't."

"What do you mean?"

"Imagine if they were completely open and honest. Imagine if everyone was. Now take that one step further and imagine if everyone shared everything. If there were no secrets, no hidden thoughts, no privacy. If everyone knew everything about everybody. No separation between people. No boundaries. No mystery. Imagine a world like that. Every channel open all the time. Everything revealed. How does that sound to you?"

He didn't wait for an answer. "We've tried it. It fried our little brains. Almost fried our future too. Better a little privacy. A little ignorance. Trust me, it's no crime to know a little less."

Then I'm in good shape, I thought. I had no idea what he was talking about.

"Why won't his bones burn, Adolph?"

"Ah, yes. That question. Do you have them?"

As a matter of fact, I did. "They're in the car."

He nodded, as if he'd expected no less. "The answer to your question is I don't know why. I only know what you know, that they won't."

He removed his glasses and rubbed his eyes. He did resemble my father, and the look he gave me—searching and warm—resembled him too.

"Have you thought of burying him?" he asked.

"My mother won't allow it."

"It's a common custom, you know."

"I do know. But it's not up to me."

"Throughout the world. Among a great many groups, as different and diverse as they can be. To hazard a guess, I'd say the custom is quite universal. And I use that term in the broadest possible way."

He replaced his glasses and leveled his eyes at me. "Did it ever occur to you that the men were there for that?"

"What? To bury my father?"

"Yes. To bury him. Simply that."

"They didn't mention it. And it didn't occur to me. Not once."

"A failure of communication perhaps. But it doesn't matter, does it? Your mother won't permit it."

"She has that right."

"Certainly she does. The right of the survivor. We should do our best to honor her wishes. Perhaps it's time you brought him in."

Him was not exactly how I thought of what I had, but I did agree that it was time, and I left the room and went to the car. By now it was late afternoon, and the sun through all the smoke and haze was a blurry ball of red. A woman pushing a stroller passed me on the sidewalk. She smiled, and I smiled back. A brief but warm and very human connection. But then I asked myself, what did her smile signify, what did it mean? And what did mine mean, and were our meanings the same? What did it mean to share something? To understand someone? To be inside another's skin or their head? And then I thought, us. What did that mean? And what about them?

The box was in the trunk. I hadn't opened it, and I didn't intend to, but I had a feeling that Adolph did. I was willing to let him, as long as I didn't have to watch. It was my dad, after all, not some random bag of bones. And frankly, in my mind he was still living. Though not, I admit, living very well: the image I had of him was an elderly man who in his last days was not at all the man he was. That's the trouble, if you can call it that, of someone living to a ripe old age: you tend to remember them as old. If they happened to be sick, especially if the sickness was prolonged, you remember them that way. I'm sure it gets better with time, easier, that is, to recall earlier days and younger selves, but at the moment what was freshest in my mind was Dad in the hospital, restless and agitated, not recognizing me or my mother, awake but clearly somewhere, if not someone, else. The word "possession" comes to mind, but it was more the absence of possession, as if something structured and maybe even made up, like a facade, were gone. Stripped away, to reveal a deeper—and frankly, deeply disturbing—inner self. Had I seen this person before? The one with barely a thread of connection to the real world, the world, that is, that most of us lived in and knew? Maybe I had. Once when he got so mad while driving he had a near fatal accident. Once when he got so drunk he started singing in someone else's voice. Another time, or several times, when he and my mother fought. Mostly he was not this way, and I loved him, but he did have a temper, which, when it came, made me think

of him as monstrous: those bulging eyes, usually so mild, that strained and frightening voice, that blood red face.

So yes, I do have memories. But pretty thin evidence for his being other than what he was. Because that's what we're talking about. The A word. No one's using it . . . too scared, too diplomatic, too worried about what the family might say or do or think, too protective of us and our feelings. Whatever. But that's what they mean.

So maybe last night's dream was a message. Maybe it was the voice of truth. Those weird, inhuman bodies. Those shifting, watery faces.

Not that I believe in such things.

Not that I necessarily don't.

It does raise some questions, though. Like, where did you come from, Dad? How many of you are there? Any special powers? Weaknesses? Does Mom know?

At a certain age—I'm not sure what, but I think pre-teen—if you'd told me my dad was an alien, I'd have said cool. Go Dad. Part of it bravado, part of it pride, part a confirmation of how I was feeling anyway about him and the world. Face it, when you're a kid, everything's alien to some degree. But at an older age, like now, it's different. I want to know what it means, and what it meant then, and why he didn't tell me. I want to know who the hell I was living with, and listening to, and trying to impress. Who was I modeling myself after (and doing a pretty good job, judging by the result), and what does that make me?

The fact is, my dad did have powers. He was good at business. He was super good at cards. He was super modest. When it came to sports, he was super slow.

And vulnerabilities? His kryptonite? He didn't always believe in himself. He had a weakness for food and drink. He got angry over and over at the same things. He was stubborn to a fault.

The bones were a perfect example of his stubbornness: their resistance to being burned really shouldn't have surprised me at all. When Dad didn't want to do something, he wouldn't do it. The more you tried to get him to, the harder he'd dig in. If he does have a spirit, it's a good bet that it resides in this: the hard-headed, infuriating, refusal-to-budge persistence of his damn bones.

They weren't much heavier than the box they were packed in, but when I removed them from the trunk, I felt a weight much like what I felt when he and I would square off. The weight of expectation, but more than anything, the weight, the sheer mass, of that stubbornness of his, and not knowing how to respond to it: give in, and let him have his way? Be stubborn back and show my mettle? Should I open the box and force myself to look at him? Would that prove something? If he were watching, what would he think? If he were in my place, what would he do?

Adolph was waiting when I returned. He'd cleared the table of the chess board, and I placed the box there. He looked at it for a long time before speaking.

"You've not opened it?"

"No."

"But you want to."

I shook my head.

He looked at me and at the same time laid his palm on the box, pressing it there as though to steady himself, or else to steady and maybe comfort who or what was inside. He didn't reply, and at length I said, "I do and I don't."

He nodded. "You have an urge."

"A small one."

"A sense of obligation."

I shrugged.

"Have you ever seen a man's bones?" he asked.

"In books. And museums."

"Up close?"

"Not so very close."

"Ever held a skull?"

"No."

"It's an interesting business, skulls and bones. But not so interesting that a man should have to look at his own father. I advise against it. Unless you're used to such things, the sight can do a good deal of harm."

I thanked him. I did feel an obligation, and his words helped relieve it.

"So what do we do? What's the plan?"

"You're asking my advice?"

"Yes. Please."

He folded his hands. "Very well. Leave the box with me."

"Leave it?"

"Come back tomorrow and I'll give you his ashes."

"How are you going to do that?"

"Not by fire," he said.

"How?"

He didn't reply, and I recalled that he had been a chemist. Possibly he was going to use some chemical method. Possibly that method was illegal, and he didn't want to implicate me.

"I'd like you to trust me," he said.

"I'd like to."

"Good." A moment passed. He gave a knowing smile. "The question is, will you?"

"If you tell me how you're going to do it."

"And if I can't?"

"Can't or won't?"

"Can't," he said.

"Then I'd want to know why."

The smile deepened. "Of course. And I'd say that why is unimportant. Or rather, secondary. Inessential at this time. Now our job is to honor your father and take care of your mother. And of you. That's the business at hand. We can continue our conversation later, though I'm not sure you'll end up knowing more than you do now. The older you get, the more you learn to be satisfied with less. At any rate, now we should do what we have to."

"Who is he, Adolph?"

"You know who he is."

"I don't."

"Forgive me, but you do."

This was my father's oldest friend. My mother trusted him, and I wanted to trust him, too. I longed to trust him. But I couldn't, not in this.

I thanked him for everything and left the house, the box in my arms. He watched from the doorway as I slid it in the trunk, doing nothing to interfere. I pulled away and drove a few blocks, then stopped and moved the box to the back seat. A few blocks more, and I moved it to the front.

The sun had set, and the moon was low in the sky, shrouded gray. It looked like a hole through which all the smoke and soot might pour and disappear, leaving the world, my world, clean and whole again. In the distance along the edge of a hill was a smudge of red where another fire raged. My heart was heavy. I stopped the car.

Adolph was right. I did know who he was. And that person wasn't in the box, or behind some secret door, or in what people thought or hinted about him. Who he was was inside me. And knowing this was knowing a lot, and it made the decision of what to do next easy.

The fires continued to ravage the state, until it seemed we had entered an era of flame. If you didn't see one, then you saw smoke, and breathed it in and tasted it. But then one day, miraculously, the sun rose in a sky that was nearly blue. And the air was nearly fresh. And that was the day we scattered his ashes.

Some, at Mom's insistence, we sprinkled on a pathetic little planting strip beside Oak Mall, which was all that remained of a park where she and Dad had courted. The rest we scattered on a hilltop overlooking town. Adolph had sealed them in a heavy-duty plastic bag, which he had thoughtfully placed in a stainless steel urn. My mother, who normally notices such things, made no comment, but to me the urn looked suspiciously like a large martini shaker.

Were they my father's remains? My mom certainly thought they were. And I was inclined to think so too. If they weren't, they were doing what they had to. They were fulfilling their purpose.

It's a terrible thing to live in a constant state of doubt. It's hard, sometimes excruciatingly hard, to always be unsure. Whoever my father was and wherever he came from, the earth had him now. But we had him before, and without question he had us. ○

NEXT ISSUE

SEPTEMBER ISSUE

Kristine Kathryn Rusch, one of this year's Readers' Award winners, returns with another big novella, this time set in a wholly new universe from her "Diving into the Wreck" series. In "Broken Windchimes," a talented human vocalist, culturally sequestered by his alien patrons, finds both hope and transcendence through the unknown pleasures of his own race's music. **Lisa Goldstein**, Nebula-nominee at time of writing, returns with a tale of a circus you can't quite run away to join in "Away from Here"; **Benjamin Crowell** is back again to tell the story of an intelligent house that just won't submit to getting "flipped" in "Tear-Down"; **Steve Rasnic Tem** contributes a complex tale of the difficulties in fixing the future through time travel in "The Day Before the Day Before"; fan favorite **Mike Resnick** and talented newcomer **Lezli Robyn** tell of a man and his robot who are clearly "Soulmates"; **Ferrett Steinmetz** makes his *Asimov's* debut with a funny story about the dangers of taking your 'net popularity too seriously in "Camera Obscured"; and stalwart *Analog* contributor **Jerry Oltion** recounts the tale of a man who, for once, was extremely careful about what he wished for, in "Her Heart's Desire."

OUR EXCITING FEATURES

Robert Silverberg, in *Reflections*, begins to share the thought process behind the invention of his popular Majipoor series in "Building Worlds I"; **Paul Di Filippo** brings us "On Books"; plus an array of poetry you're sure to enjoy. Look for our September issue on sale at your newsstand on July 28, 2009. Or you can subscribe to *Asimov's*—in classy and elegant paper format or new-fangled downloadable varieties, by visiting us online at www.asimovs.com. We're also available on *Amazon.com's* Kindle!

ANATHEM

By Neal Stephenson

Morrow, \$29.95 (hc)

ISBN: 978-0-06-147409-5

Stephenson's latest opus runs 937 pages, including a glossary and three "calca"—geometrical proofs that figure in scenes from the story. A reader unfamiliar with Stephenson might well ask whether it's worth it. After all, the book uses a fair amount of invented language, and asks the reader to follow some fairly complex philosophic and scientific issues. Nor is Stephenson necessarily known for slam-bang action—unless you consider the clash of ideas to fall under that description.

But if you like the idea of a good philosophical debate, wrapped in the guise of a far-future SF story, dig right in. Stephenson has created a world that owes something to Walter Miller's *A Canticle for Leibowitz*, with scientific knowledge being preserved by a sort of monastic order separate from the society around it. Here, though, the preserving power is not religious, despite a high degree of discipline and ritual in the daily lives of the *fraas* and *suurs* (brothers and sisters). Religion is seen as an aberration of the secular society, which prefers supernatural explanations to scientific reasoning. Society outside the concent has achieved a fairly high technological level on its own, with videos, cell phones, and so forth—use of which is forbidden to the scholars.

The story is told by Fraa Erasmus, a young *avout* of the Concent of Saunt Edhar, one of the great centers of learning. At the story's beginning, Saunt Edhar opens its doors for ten days to let its usually cloistered scholars mingle with the seculars and take in new blood from promising young outsiders. Now in his late teens, Raz (as his peers call him)

takes the opportunity to visit his sister Cord, a mechanic. He observes how the outside world has changed over the decade he has spent inside. Back in the concent, in breaks from his assigned duties (notably winding the concent's huge clock), Raz indulges in horseplay with his fellow *fraas*, and in dialogue with both his peers and the senior scholars.

A crisis comes at the end of the open door period. The Inquisitors, an international body that maintains disciplines in the various concents order astronomical observatories be sealed off until further notice. This unprecedented command prompts Raz to sneak into the observatory and place a recording disk in one of the instruments, hoping to find the forbidden data. Then Raz is confined to a small cell and ordered to memorize tedious and meaningless texts as punishment for talking to the Inquisitors without permission.

Shortly thereafter, Fraa Orolo, Raz's mentor in astronomy, is banished from the concent for using forbidden secular technology to observe the skies in hopes of discovering what the Inquisitors are hiding. His exile convinces several younger *fraas* and *suurs* that the forbidden knowledge forebodes a crisis of civilization may be in the offing. This is not an idle speculation. Over several millennia of recorded history, outside civilization has collapsed several times, almost taking the concents along with it.

Sure enough, when Raz is freed from his punishment and finally recovers the recording disk, he finds evidence of something in a polar orbit around Earth—undoubtedly a space ship. But where is it from? And what are its intentions? The rest of the plot builds from that discovery as Raz and various other scholars tackle the problem.

Stephenson unfolds the tale very slow-

ly, and it is densely packed with information. A fair amount of the intellectual history is a whimsically altered version of our own. For example, Occam's Razor is reconfigured as Diax's Rake, with a story that has clear echoes of Jesus's whipping the moneychangers out of the temple.

While this is Raz's coming of age story, the subsidiary characters and world building are very nicely done as well. Stephenson is clearly having fun with the language and the history of his created world, dropping little linguistic bombs every few pages—especially in straight-faced Dictionary definitions (see “bulshytt”) that serve as epigraphs to scenes. There are also quite a few thinly disguised allusions to the lingo of SF fandom—one school of scholars is even known as the Faanians (“faan” in SF slang refers to those who hang out at SF conventions but rarely read the literature).

In *Anathem*, Stephenson has turned from the arduous historical research of his Baroque Cycle to a science fictional world in which he can play more freely with many of the same ideas. A challenging read, but a highly rewarding one.

THE ANDROID'S DREAM

by John Scalzi

Tor, \$6.99 (mm)

ISBN: 978-0-765-34828-9

John Scalzi has, in the course of five books, put himself in the front ranks of SF writers. While I heartily recommend everything he's written, this novel gives a good example of the author's strengths and style. But you could equally well start with *Old Man's War* and work your way through the military series that begins with that book. It's all good.

Scalzi is frequently compared to Heinlein, and it's a fair cop, especially in the aforementioned series. Like Heinlein, he often begins a story by creating a credible bridge between the commonplace world we all inhabit and the science fictional futures he depicts, giving a reader who doesn't live and breathe science fictional ideas an entry into the story.

In *The Android's Dream*, Scalzi posits

an alien species, the Nidu, whose language uses smells the way we use sounds. A human diplomat who hates the aliens concocts a device to convert intestinal gas into a deadly alien insult. He unfortunately manages to kill both himself and the Nidu ambassador in the process, turning a fart joke into an interstellar incident.

Scalzi then introduces Harry Creek, a veteran of a disastrous human defeat in a previous war against the Nidu. He's been supporting himself as a freelance consultant to the State Department, specializing in delivering bad news to alien races. The Nidu incident has escalated, because the Nidu require a rare breed of sheep, the Electric Blue, for their ruler's coronation ceremony. And unless Earth can deliver the sheep, the Nidu are going to declare war—which will probably mean the end of the Earth.

The State Department hires Creek to find an Electric Blue to pacify the Nidu. With the aid of an A.I. based on the personality of one of his old friends who died in the last Nidu war, Creek is soon on the track. Of course, things get complicated as various bad guys try to stop him from fulfilling his mission. Creek and a beautiful pet shop owner named Robin Baker—whose family tree is way more bizarre than she realizes—end up working together to solve the problem.

The universe in which all this takes place owes something to such previous models as Niven's Known Space. But here humankind's pretensions to dominance have to take second place to the reality that we're a very backward species, in galactic terms. Even the Nidu, who previously beat us handily, are low on the pecking order. But with the aid of Robin, his A.I., and a healthy dose of luck, Creek pulls humanity's biscuits out of the fire—just in the nick of time.

Scalzi spins a well-paced thriller plot with consistent ingenuity, plenty of action, and touch of outrageous humor at unexpected spots. And the allusion in the title to Phil Dick's *Do Androids Dream of Electric Sheep?* works on several plot levels.

Scalzi has moved in short order from "new guy in the field" to "must-read." If by some chance you haven't yet caught up with him, I recommend doing so without further delay.

THE REVOLUTION BUSINESS

by Charles Stross

Tor, \$24.95 (hc)

ISBN: 978-0-765-31672-1

The fifth novel in Stross's "Merchant Princes" series brings to a head the long-foreshadowed clash between the US and the Mark, an alternate North America with a feudal culture.

Miriam Blackman, the Boston-based techie who discovered in *The Family Trade* that she is the heir of a robber-baron family in the Mark, survived a series of dangers to become the *de facto* head of the family. She has also learned that several other Earths exist. One is a quasi-Victorian society in a colonial America that never won its freedom. Miriam sees a way to turn her family's business from drug smuggling to selling technology from our world—a safer and more stable way to make a living. But that colonial world is on the brink of revolution, and she and her allies—who include some of the leading rebels—must hang on long enough to take advantage of the economic opportunities.

Meanwhile, back in the Mark, a full-scale war rages between Miriam's family—a still more conservative group of royalists. And at the same time, the U.S. government in the world most like our own (with some obvious differences) has realized that entire alternate Earths full of untapped strategic materials are available for exploitation. Both the Americans and the royalists of the Mark are willing to adopt any means available to reach their goals—including the nuclear option.

The stakes rise higher when explorers from the Mark discover a fourth, uninhabited world where humanity appears to have gone extinct despite a level of technology apparently higher than twenty-first century Earth. There are hints that a nuclear war may have occurred. But

the escalation of hostilities in the three inhabited worlds has prevented serious investigation of this or other new worlds.

Against this increasingly complicated background, Stross generates several fast-moving action plots, with a number of interesting characters in addition to Miriam. The revolutionary Victorian world is perhaps an even more interesting society than the Mark or "contemporary" America. A couple of long-running characters get killed off, and a fair number of previously minor characters grow to more interesting proportions.

Stross's ability to combine interesting ideas with solid plotting is one of his great strengths. In this case, the ideas arise primarily from economics and history; this may be one of the few fantasy series where the author has made a serious attempt to figure out how societies can actually support themselves in between the battles and banquets.

Fair warning: the book ends on a blatant cliffhanger. Stross obviously enjoys making his audience wait for the next installment to find out how—or even whether—his characters are going to get out of the trouble he's left them in. If you can't stand the suspense, buy the book now and save it (and later volumes) to read when the series is complete.

YOU ARE HERE

A Portable History of the Universe
by Christopher Potter

Harper, \$26.99 (hc)

ISBN: 978-0-06-113786-0

The universe of modern science is huge and ancient, and our place in it is tenuous. So it is refreshing to have a book that gives an accurate description of the cosmos without losing the human scale.

Potter begins, in fact, by extrapolating from the scale of our bodies to the other objects surrounding us. First up the scale of size, through elephants and whales to large buildings and geographic features, then to planets, stars, galaxies, and finally the universe itself. He then turns around and goes down the orders of magnitude—through insects, microbes,

and atoms down to the Planck length—the shortest meaningful distance known.

Having put everything in human context, Potter then steps back to offer a short history of science. We get quick summaries of the Greek philosophers, the scientific revolution of Galileo and Newton, and the modern synthesis that is still trying to reconcile relativity and quantum mechanics.

Potter freely admits that he doesn't understand quantum phenomena. But neither do the likes of Stephen Hawking—at least not the way we intuitively understand gravity or motion. We can calculate what happens on the quantum scale, and that's enough for science. Ditto for the events of the Big Bang and the puzzles posed by dark matter and dark energy—which are still being figured out by cosmologists. Potter puts them in the context of what we do know and understand.

The final chapters undertake a journey through time, with a focus on the formation of Earth and the emergence of life—including us. Potter addresses the puzzles that lie at the beginning of life frankly. We don't really know how life emerged, whether it has done so more than once, or whether there is more than one chemical pathway from inert matter to living creatures. These are the kinds of things SF likes to speculate on—and Potter's treatment will give readers a useful context for understanding those speculations.

Potter has a scientific education, but he is not a professional scientist. He has worked as a publisher, with a fair number of well-received authors of fiction in his portfolio. This gives him insight into how to explain complex matters to people from a non-technical background—linking them to familiar material and putting them in the context of everyday life.

Shining a light on this subject without dumbing things down beyond all recognition is the hard part of writing a book like this. Potter has done it in fine style, and this is among the most readable introductions to modern science in recent years. It would be a great book to give any literate person who wants a better idea

of how the universe fits together, and how we have come to understand of it.

RHETORICS OF FANTASY

by Farah Mendelsohn

Wesleyan University Press,

\$27.95 (tp)

ISBN: 978-0-8195-6868-7

A scholarly attempt to create a taxonomy of fantasy runs the risk of missing everything that makes the genre worth reading. Rest assured—Mendelsohn isn't slumming, or working up a scholarly publication merely for career advancement. It's clear on almost every page that she was reading these books for her own enjoyment long before she got into the academic world of critical analysis and close reading. Her insights can give those of us who still read primarily for enjoyment a fuller understanding of just how things work in the worlds of fantasy.

Mendelsohn, who has previously done scholarly work on science fiction, divides fantasy into four broad categories: the portal quest (e.g., *Narnia*), the immersive (Peake's *Titus Groan*), the intrusive (much of Poe and Lovecraft), and the liminal (Megan Lindholm's *Wizard of the Pigeons*)—with a fifth category gathering up “the irregulars.” She aims to cover the entire genre—both in its commercial and its more literary variants, from children's books to adult-oriented works, and including comic, dark, and all the other flavors of fantasy. Accordingly, she includes writers as different as Lewis Carroll, Stephen R. Donaldson, Neil Gaiman, Terry Pratchett, and China Miéville.

Mendelsohn recognizes that her categories are essentially tools for understanding the different approaches to the fantastic. She freely moves examples from one category to another when they make her points clearer. And she is quite willing to cite less familiar work, whether a late eighteenth-century gothic like *The Castle of Otranto* or an early modern piece like *Lud-in-the-Mist*, alongside Pratchett's *Discworld* or Leiber's *Fafhrd* and the *Grey Mouser*—or works better known in Britain than in the U.S.

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Mendelsohn identifies common tropes—for example, the "club narrative," a tale told in a social setting by a narrator who claims to have experienced its events—no matter how odd or improbable. Arthur C. Clarke's "Tales from the White Hart" is one of many examples. Mendelsohn shows how the trope has links as far back as Chaucer and how its structure serves to channel the reader's response to it.

Another common theme in fantasy is "thinning"—a sense that the modern world has somehow lost the richness and depth of an earlier culture of which it is a descendent. Middle-Earth, as we encounter it in the era of *Lord of the Rings* and *The Hobbit*, is a prime example; the characters are constantly aware that a long and complex history lies behind them, and the reader is given to understand that the events unfolding in the

story are a poor reflection of the great days that went before. (Some readers of the *Silmarillion* may wish that Tolkien had left the story of those earlier days untold, so as not to ruin by explicitness the grandeur created by suggestion.)

Few will have read more than a fraction of the cited texts. This has the benefit of stirring up curiosity about the unfamiliar books mentioned—some of which are readily available. Others will require visits to a well-stocked library or a search of specialty booksellers.

And while many will find points of disagreement with Mendelsohn's observations and analyses, the book will encourage readers to think about their reading—past, current, and future.

Serious fantasy readers—and those who'd like to expand their knowledge of the field—should search this one out. ○

SF CONVENTIONAL CALENDAR

I think events we Asimovians would particularly enjoy are LibertyCon, Polaris, ReaderCon, WesterCon, and ConFluence. Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For an explanation of con(vention)s, a sample of SF folksongs, and info on fanzines and clubs, send me an SASE (self-addressed, stamped #10 [business] envelope) at 10 Hill #22-L, Newark NJ 07102. The hot line is (973) 242-5999. If a machine answers (with a list of the week's cons), leave a message and I'll call back on my nickname. When writing cons, send an SASE. For free listings, tell me of your con five months out. Look for me at cons behind the Filthy Pierre badge, playing a musical keyboard.—Erwin S. Strauss

JUNE 2009

24-28—Origins. For info, write: 280 N. High, #230, Columbus OH 43215. Or phone: (614) 255-4500 (10 AM to 10 PM, not collect). (Web) originsgames.com. (E-mail) custserv@gama.org. Con will be held in: Columbus OH (if city omitted, same as in address) at the Convention Center. Guests will include: none announced. Year's big one for gamers.

25-29—MidWestCon. (513) 922-3234. cfg.org. Doubletree, Sharonville (Cincinnati) OH. The original relaxacon's 60th year.

26-28—ApolloCon. apollocon.org. Houston TX. Will McCarthy, Gavin Grant, Kelly Link, Pat Rawlings, Amy McNally.

26-28—SF Hall of Fame Weekend. locusmag.com. Museum of SF, Seattle WA. Charles N. Brown. Locus Awards presented.

26-28—Trek Expo. (918) 369-0650. trekexpo.net. John C. Hammons UMAC Arena, Tulsa OK. Star Trek event's 30th year.

26-28—Monster Bash. (724) 238-4317. creepyclassics.com. Days Inn, Butler (Pittsburgh) PA. Ron Chaney. Horror film.

JULY 2009

2-5—WesterCon. (480) 945-6890. fiestacon.org. Mission Palms, Tempe AZ. A.D. Foster. The big Western con's 62nd time.

2-5—InConJunction. inconjunction.org. Sheraton Keystone Crossing, Indianapolis IN. Jeanne & Spider Robinson, T. Smith.

2-5—AnthroCon. anthrocon.org. Convention Center, Ft. Duquesne Blvd., Pittsburgh PA. Anthropomorphics/furries.

2-5—Anime Expo. (714) 937-2994. anime-expo.com. Convention Center, Long Beach CA.

3-5—ConVergence. (651) 647-3487. convergence-con.org. Sheraton Bloomington South, Bloomington MN.

4-5—Japan National SF and Fantasy Con. t-con2009.jp. Siobara Hot Springs Village, Tochigi Prefecture, Japan.

9-12—ReaderCon, Box 65, Watertown MA 02477. readercon.org. Marriott, Burlington MA. Hand, Gilman. Written SF/fantasy.

10-12—LibertyCon, Box 695, Hixson TN 37343. libertycon.org. Chattanooga TN. Ben Bova, D. Sweet, T. Weisskopf.

10-12—Polaris, Box 7097, Toronto ON M5W 1X7. (416) 410-8266. tcon.ca. Sheraton, Richmond Hill ON. SF and fantasy.

10-12—Shore Leave, Box 6809, Towson MD 21285. (410) 496-4456. shore-leave.com. Marriott, Hunt Valley MD. Media SF.

10-12—Bad Wolf, 66 School Lane, Welwyn, Herts. AL6 9PJ, UK. tenthplanetevents.co.uk. London UK. McCoy. Dr. Who.

10-12—Creation, 217 S. Kenwood, Glendale CA 91202. (818) 409-0960. creationent.com. Westin, Buckhead (Atlanta) GA.

17-19—OSFest, 7934 Grover, Omaha NE 68124. (402) 991-7934. osfes.org. Comfort Inn. Kevin J. Anderson, R. Moesta.

17-19—BabelCon, Box 86580, Baton Rouge LA 70879. babelcon.org. Cook Hotel. Richard Hatch, Peter David, more.

17-19—VidCon, Box 2213, Plant City FL 33564. (812) 982-9616. stonehill.org. Hilton, St. Petersburg FL. Fan fiction.

17-20—MythCon, Box 6707, Altadena CA 91001. mythsoc.org. DeNeve Plaza, UCLA, Los Angeles CA. High fantasy.

18-19—Creation, 217 S. Kenwood, Glendale CA 91202. (818) 409-0960. creationent.com. Marriott, Minneapolis MN. Media.

18-21—Askatraz. (415) 392-8000. Parc 55 Hotel, San Francisco CA. Chris Rankin. Harry Potter.

23-26—ComiCon, Box 128458, San Diego CA 92112. (619) 491-2475. Convention Center. Huge. Movie stars helicopter in.

24-26—ConFluence, Box 3681, Pittsburgh PA 15230. (412) 344-0456. parsec-sff.org. Airport Doubletree.

AUGUST 2009

6-10—Anticipation, CP 105, Montreal QC H4A 3P4. anticipationsf.ca. Gaiman, Hartwell, Doherty. WorldCon. US\$195.

AUGUST 2010

5-8—North American SF Convention, c/o SAFE, 2144 B Ravenglass PL., Raleigh NC 27612. raleighnasfcon2010.org.

SEPTEMBER 2010

2-6—Aussiecon 4, GPO Box 1212, Melbourne VIC 3001, Australia. aussiecon4.org.au. World SF Convention. US\$175.

AUGUST 2011

17-21—Reno Worldcon, Box 13278, Portland OR 97213. rcfi.org. Reno NV. Bidding unopposed for the 2011 WorldCon.

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